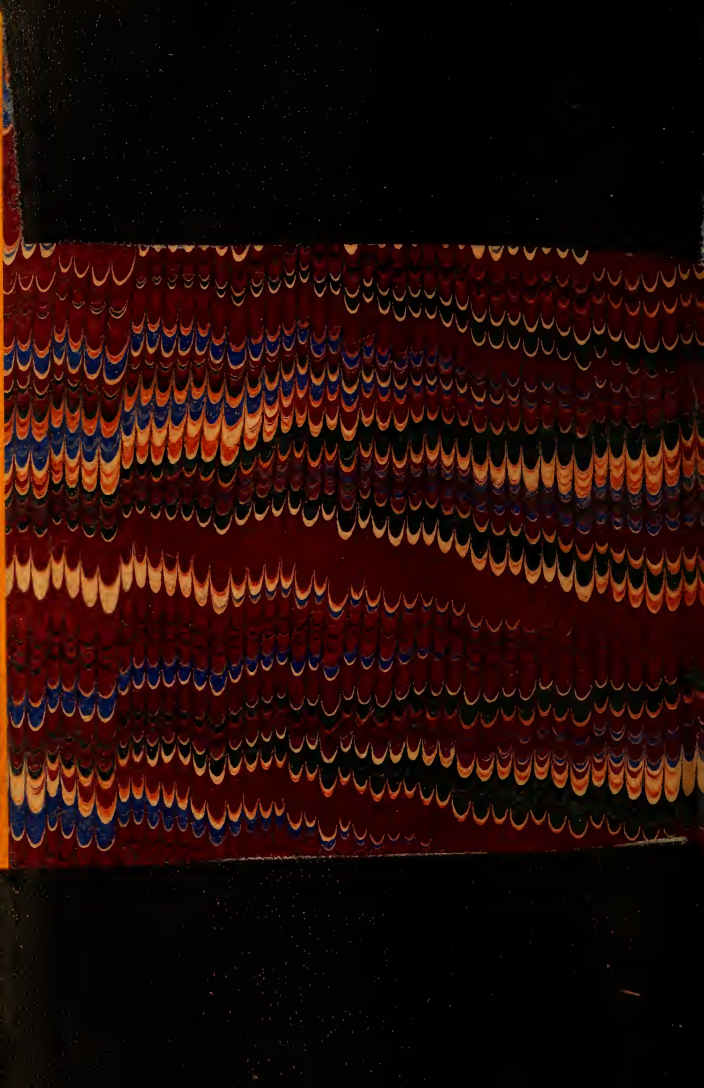
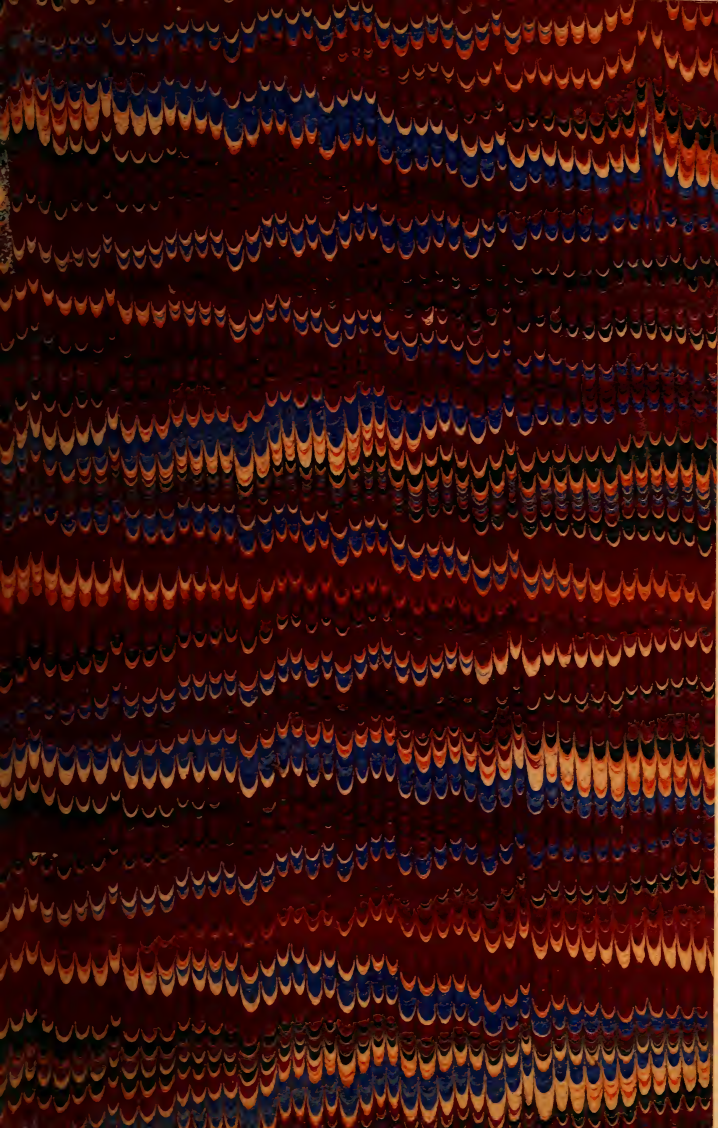




BOAT-BOOK
UNITED STATES NAVY

1905





CLAYTON B. VOGEL COLLECTION

Clayton B. Vogel

NOTICE

STATE OF NEW YORK

IN SENATE

JANUARY

REPORT OF THE COMMISSIONER OF THE LAND OFFICE
IN RESPONSE TO A RESOLUTION PASSED BY THE SENATE
JANUARY 18, 1887

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CLAYTON B. VOGEL COLLECTION

BOAT-BOOK

UNITED STATES NAVY

1905



PREPARED UNDER THE DIRECTION OF THE
U.S. BUREAU OF NAVIGATION,
NAVY DEPARTMENT



BY A BOARD COMPOSED OF

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NAVAL INSTITUTE, ANNAPOLIS, MD.

1905

BOAT-BOOK
UNITED STATES NAVY
1905

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PHILIP R. ALGER
Secretary and Treasurer, Naval Institute

MARINE CORPS

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NAVY DEPARTMENT,
WASHINGTON, D. C.,

JANUARY 12, 1905.

The Boat-Book, U. S. Navy, 1905, prepared under the direction of the Bureau of Navigation, is issued for the use of the Navy.

The instructions contained in this book supersede all others of a similar nature and will be strictly observed.

PAUL MORTON, *Secretary.*

W

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INTRODUCTION.

The Board for the Revision of Service Drill-Books has classified all drills under three separate heads—*ship drills*, *boat drills*, and *shore drills*—and these have been embodied in three books as follows:

Ship and Gun-Drills, U. S. Navy, 1905.

Boat-Book, U. S. Navy, 1905.

The Landing-Force and Small-Arm Instructions, U. S. Navy, 1905.

The Boat-Book, U. S. Navy, 1905, contains instructions on all matters pertaining to boats, boat-exercises, etc., as well as instructions in U. S. Navy-Signals, and the boat-signal code. It is a compilation of orders and instructions which have heretofore been scattered in various publications, combined with hitherto unwritten customs of the service. These are all assembled in the Boat-Book for convenience of reference and to insure uniformity in all matters pertaining to boats.

The instructions which relate purely to seamanship are taken almost entirely from either Knight's Modern Seamanship, or from Luce's Seamanship (Ward), 1895. Boat-signals, regulations for the prevention of collisions at sea, and the buoy system in United States waters are copied from the Boat-Signal Book, 1898. Boat-drills and exercises are compiled from the above-mentioned treatises on seamanship, from various official pamphlets, etc., and they include also the customs of the service.

General instructions concerning service in ship's boats, boat-salutes, etc., are founded on instructions in the U. S. Navy Regulations and include many hitherto unwritten customs of the service.

The boat-signal code was designed for use in communicating between ships and boats and in exercising divisions or flotillas of boats. In this code the signal numbers have no connection with those in the general or tactical signal-book. The instructions in the navy code which are contained herein are not confidential, hence the Boat-Book is to be considered in no sense confidential—those to whom it may be issued being held only to the same accountability that applies in the case of other government property.

Instructions for tactical maneuvers are to be found in the tactical signal-book, with which all officers are expected to make themselves familiar.

Suggestions regarding changes or improvements are invited, and these will be submitted to the Bureau of Navigation.

In order that the boat-signal code may at all times be available in boats for communicating by signal with ships, a copy of the

"Boat-Signals, U. S. Navy, 1898," or the "Boat-Book, U. S. Navy, 1905," is made a portion of the regular equipment of each boat-box. But until the present large supply of the former books (which contain the boat-signal code, unchanged) is exhausted, they may be used in the boat-box, while the latter, which is issued to officers individually, may be retained by the officer receipting for the same; but coxswains will be thoroughly instructed in its contents.

PART I

BOATS IN GENERAL.

1. Vessels of the U. S. Navy are supplied with one or more of the following classes of boats :

1. Steamers.
2. Sailing-launches.
3. Cutters.
4. Whaleboats.
5. Dinghies.
6. Punts or catamarans (or balsas).
7. Barges (supplied only to flagships).
8. Wherries—Special boats.

GENERAL DESCRIPTION.

2. **General remarks.**—The size of ship's boats is indicated by their length in feet, for example a 28-foot cutter, a 36-foot steamer, etc. The following is the length (in feet) of the boats now supplied to vessels of different classes: Steamers, 50, 40, 36, 33, 30, and 28 feet; sailing-launches, 36, 33, and 30 feet; cutters, 30, 28, 26, and 24 feet; whaleboats, 30, 29, 28, and 24 feet; and dinghies, 20, 18, 16, and 14 feet. Special 20-foot cutters and whaleboats are supplied to torpedo craft.

3. **Steamers.**—First-class battleships usually carry three steamers of different size. In the latest ships one of these will be a picket-launch, about 50 feet long. All steamers of the regulation type are fitted to mount a light rapid-fire or machine-gun in the bow. They are usually fitted with sail power, lug-rigged, to be used when the boiler is removed. Steamers are fitted with rowlock-sockets in the wash-board, and should always carry at least two oars and rowlocks for use in an emergency. Steamers assigned to the use of commanders-in-chief are known as steam-barges. Steamers of a ship are distinguished by their number, 1st, 2d, and 3d steamers.

4. **Sailing-launches** are large, heavy working-boats, square-sterned, sloop-rigged, and they are so named from the fact that sail is their usual mode of propulsion. They, like steamers, are fitted to mount a light rapid-fire or machine gun in the bow. Sailing-launches are supplied with oars, and instead of rowlocks they use grommets and thole-pins. By double-banking the thwarts, considerable speed under oars may be attained. These boats are specially designed for ship's heavy work, such as carrying water or stores, large liberty-parties, carrying out anchors, weighing kedge-anchors, etc.

5. **Cutters** are double-banked, square-sterned boats, smaller than launches, pulling ten or twelve oars, according to size. They are used as running-boats and for ship's general duties and are fitted either with sunken or swivel-rowlocks. Their sailing rig is the sliding-gunter, either with or without jib. They are frequently fitted to carry a light rapid-fire or machine gun in the bow. These boats are particularly adapted to port duty of every description.

6. **Whaleboats** are double-ended and, according to size, are single- or double-banked, pulling six or twelve oars, respectively. They are used as running-boats and for ship's general duties of a lighter character than that assigned to launches and cutters. They are fitted with swivel-rowlocks. Their sailing rig is the sliding-gunter, frequently without jib. In port they are steered with a rudder, but at sea are fitted with a steering-oar passed through a crutch (or steering-rowlock) on the quarter. These boats are therefore particularly adapted for use at sea and are generally used as life-boats. Gigs are usually of the whale-boat type.

7. **Dinghies** are small handy boats, shaped like cutters, single-banked with four oars. They are used as market-boats, or for light rough work, or ship's light duties. Owing to the small crew required, they are particularly convenient for nearly any light work in port. They carry sails and are usually sprit-rigged.

8. **Barges** are for the exclusive use of flag-officers. They resemble large cutters, but have finer lines and frequently have round sterns. They are double-banked and frequently pull fourteen oars. They are fitted with either sunken or swivel rowlocks. Their sails are sliding-gunter rig.

9. **Wherries** are light handy boats for officer's use. They can be pulled by one man.

10. **Punts** are rectangular, flat-bottomed boats, intended for painting and general cleaning around the ship's water-line. They are fitted with rowlocks on each side, but are usually propelled by sculling.

11. **Catamarans (or balsas)** are platforms secured to two hollow floats. They are used for the same purpose as punts, but are less handy. They are really carried on account of their demonstrated value in case of shipwreck. They are fitted with swivel-rowlocks and oars, but are usually sculled. Life-rafts of various designs are sometimes carried, but no regulation type has been adopted.

NOMENCLATURE.

12. The following are the authorized names of the various parts of a naval boat:

Backboard.—The thwartship board immediately forward of the

coxswain's box, placed across the stern-sheets of the boat to support the backs of the occupants.

Bilge.—The flat part of a boat's bottom, on each side of the keel, on which the boat would rest if aground. The bilge extends out to where the frames turn upward, which part is known as the "turn of the bilge."

Blade.—The broad flattened part of an oar.

Boom.—The long pole or spar used to extend the foot of a fore-and-aft sail, for example, main-boom, jib-boom.

Bottom-boards.—The fore-and-aft strips secured to the frames, forming the floor of the boat.

Brails.—The lines used for hauling the clew of a fore-and-aft sail up to the masthead. They are secured to the clew of the sail, lead up through leaders at the masthead, thence down into the boat.

Clew (of a sail).—The lower after-corner of a fore-and-aft sail.

Dead-wood.—A body of timber built on top of the keel at either end of the boat to afford a firm fastening for the cant-frames.

Frames.—The ribs of the boat;—curved timbers secured to the keel and extending upward to the gunwale.

Fore-sheets.—The portion of the boat forward of the foremost thwart.

Gaff.—A spar used to extend the upper edge of a quadrilateral, fore-and-aft sail.

Gooseneck.—A sort of iron hook, fitted to the inner end of main-boom, used for securing the latter to the mainmast. It permits free movement of the boom in any direction, with the gooseneck as a center.

Gudgeons.—Small metal fittings, similar to eye-bolts, secured to the stern-post of a boat for the rudder to hang on. They receive the pintles and thus support the rudder.

Halliards.—Lines used to hoist and lower topmasts or jib. Also those used to hoist or lower the gaff of a sloop.

Handle (of an oar).—The small part of an oar, on the inboard end of the loom, which the oarsman grasps when pulling.

Head of sail.—The upper corner of a triangular sail. The upper edge of a quadrilateral sail.

Heel of mast.—The lower part of the boat's mast; the end of the mast which fits in the step on the keel.

Keel.—The principal timber of a boat, extending from stem to stern at the bottom, and supporting the whole frame.

Leather.—The portion of an oar which rests in the rowlock. This is sometimes covered with canvas, but is usually covered with leather, hence the name.

Loom.—The portion of an oar extending from blade to handle.

Lug-rig.—Applied to large quadrilateral sails bent to a yard

that hangs obliquely to the mast: the halliards being secured nearer to one end of the yard than the other.

Main-boom.—The boom on the mainmast which spreads the foot of the mainsail.

Oars.—Long wooden implements for propelling boats by pulling. Oars consist of blade, loom and handle

Painter.—A rope, secured in the bow, for towing or for securing the boat.

Pintles.—Small straight pieces of metal secured to the rudder and fitting in the gudgeons on the stern-post, thus supporting the rudder. In some boats the pintle is a long erect pin on the stern-post fitting in rings or gudgeons on the rudder.

Plug.—The stopper which is placed in the drain-hole when the boat is lowered. It should be secured in the boat by a small lanyard.

Rising.—The narrow fore-and-aft strakes inside of a boat, secured to the frames on which the thwarts rest.

Rowlocks.—Forked pieces of metal in which the leather of oars rest while pulling. Sunken rowlocks are those which are set down into the gunwale of the boat. Swivel rowlocks are movable, a pin on the rowlock fitting in a socket in the gunwale.

Rudder.—A flat plank hung abaft the stern-post by means of gudgeons and pintles, used for steering a boat.

Sheer.—The rise of the longitudinal lines of a boat from the horizontal plane, as seen in looking along a boat's side. The curve of the gunwale when compared with the straight water-line.

Sheer-strake.—The upper strake of the boat.

Sheet.—The lines secured to the clew of a sail, or to the main-boom, used to set the sail and hold it in position.

Shrouds.—Lines leading from the masthead to a boat's rail. They support the mast on each side.

Sliding-gunter rig.—A rig for boats in which a sliding topmast is used to extend a triangular sail. As used in the Navy, it consists of two triangular sails (fore- and mainsail) and usually a jib. The mainsail is fitted with a main-boom.

Sloop-rig.—Consists of a large fore-and-aft quadrilateral sail with gaff and boom, also a jib and jib-boom.

Sprit-rig.—Consists of a single mast carrying a large quadrilateral sail, the peak of which is held out by a light movable wooden boom, called a sprit, which, when in place, extends from the peak of the sail to a stirrup on the lower part of the mast.

Stem.—The up-turned portion of the keel, at the bow of the boat, to which the forward ends of the planks are secured.

Step of mast.—A small metal receptacle on the keel in which the heel of the mast rests.

Steering-rowlock.—A peculiar form of swivel-rowlock, fitted near the stern of a whaleboat, in which the steering-oar is shipped. This is sometimes called a crutch.

Stern-fast.—A stern painter for use in securing the stern of a boat.

Stern-post.—The principal piece of timber in a boat's stern-frame. It is a continuation of the keel at the after part of the boat.

Stern-sheets.—The space in the boat abaft the thwarts.

Strakes.—Continuous lines of fore-and-aft planking. Each line of planking is known as a strake.

Stretcher.—Athwartship, movable pieces against which the oarsmen brace their feet in pulling.

Tack.—The forward, lower corner of a fore-and-aft sail.

Thrum-mats.—Mats made of a small piece of canvas with short strands of rope-yarn sewed on it—called thrumming. These are placed between the rowlocks and the oars to prevent noise in pulling.

Thwarts.—The seats on which the oarsmen sit.

Tiller.—A bar or lever, fitted fore-and-aft in the rudder head by which the rudder is moved.

Trailing-lines.—Small lines secured to the boat and around the oars to prevent the latter from getting adrift when trailed.

Yoke.—Athwartship piece fitting over the rudder head, and by which rudder is moved when the tiller is not shipped.

Yoke-lanyards.—Small lines attached to or rove through the ends of the yoke for use in steering when the yoke is shipped.

PART II

BOAT-GEAR AND EQUIPMENT.

BOAT-GEAR.

Pulling-Boat.

13. (1) The following boat-gear will be carried by pulling-boats at all times, except when special circumstances render it undesirable:

1. Anchor, with chain, or line, bent and ready for use.
2. Boat-painter.
3. Stern-fast.
4. One complete set of oars. If swivel-rowlocks, which do not permit tossing, are used, each oar must be fitted with a trailing-line.
5. Spare oars for one thwart (fitted with trailing-line if the above-described rowlocks are used).
6. Three boat-hooks.
7. Masts, spars, sails and rigging in spar-cover complete, ready for use.
8. Awnings and stanchions, if climatic conditions demand.
9. Boat-bucket for bailing and for general use.
10. Breaker with 2 days' good drinking-water for crew.
11. One set of stretchers complete.
12. One boat-ensign and staff.
13. Boat-compass.
14. Tarpaulin.
15. Boat-box.
16. Tin-box with cover for cleaning-gear.
17. Key to boat-box.
18. Rudder and tiller, each fitted with a light lanyard.
19. Plug, secured to keel by a good lanyard.
20. One set of rowlocks, and two spare ones (if swivel-rowlocks are used), each fitted with a short lanyard.
21. One set of boat-fenders, fitted with lanyards.
22. Two hand-grapnels fitted with chain and rope.
23. Barges and gigs will always be supplied with the Admiral's or Captain's flag or pennant.
24. Binoculars, if supplied, will always form a part of an officer's equipment when on a boat expedition or at tactical drill.
25. In addition to the above articles, every boat (except life-boats in use as such) leaving a ship at sea will be provided with rifles and cartridges.

(2) When the ship is at sea, the following additional articles will be carried in boats:

- (a) 1 box of bread.
- (b) 1 box of meat.
- (c) If whaleboat, one crutch and steering-oar.

(3) **On arrival in port**, bread and meat will be removed and sent to the storeroom. The compass, unless secured in boat, will habitually be kept in the navigator's storeroom, when the boat is not in the water. The remainder of the boat-gear will habitually be kept in the boat. Water in breakers will be renewed from time to time, to keep it palatable and healthful.

NOTE.—Some of the above articles are frequently carried in the boat-box, and when room in the boat-box permits this is preferable.

Steamers.

14. The following articles form the complete equipment of a steamer, and will be carried at all times except when special circumstances render it undesirable:

1. Anchor, with chain, or line, bent and ready for use.
2. Boat-painter.
3. Stern-fast.
4. Two oars, with rowlocks, or grommets and thole-pins.
5. Three boat-hooks.
6. Boat-bucket.
7. Breaker, filled with drinking-water.
8. Boat-ensign and staff.
9. Boat-compass
10. Tarpaulin.
11. Boat-box complete.
12. Tin-box with cover for cleaning-gear.
13. Key to boat-box.
14. Puddings or fenders.
15. If special boat, flag or pennant for officer carried.
16. Cushions and cushion-covers.
17. Coal, water, oil, kindling-wood, and matches. To be coaled and watered in the morning watch, or other designated time.
18. Lantern, trimmed, filled, and ready for lighting.
19. Necessary implements for service of engines.
20. Two hand-grapnels, fitted with chain and rope.

BOAT-BOX.

15. The boat-box shall be watertight, as small as possible, and arranged to go under the thwarts without difficulty. It should be provided with a lock and key, and the boat will never leave the ship without the latter. It shall contain the following articles:

1. Axe.
2. Hatchet.
3. Hand-saw.
4. Hammer.
5. Screw-driver.

6. Cold-chisel.
7. Boat calking-iron.
8. Giant tool-handle.
9. One pair of cutting-pliers, large size.
10. One brace, with $\frac{1}{4}$ -, $\frac{1}{2}$ -, $\frac{3}{4}$ -, and 1-inch bits.
11. Marlinespike.
12. Palm.
13. Sail-needles.
14. Assorted wire-nails.
15. Assorted screws.
16. Tacks.
17. Sheet-lead.
18. Five pounds of $\frac{1}{8}$ -inch wire seizing.
19. Lamp-wick.
20. Spun-yarn.
21. Six fathoms of 18-thread manila.
22. Sail-twine.
23. Fishing-lines, hooks and sinkers.
24. Lead and line, first two fathoms marked in feet.
25. One pound of tallow.
26. One bottle of cleaning-oil for small-arms.
27. Six candles.
28. Safety-matches in hermetically sealed box, or large-mouthed bottle with screw-top.
29. One small medical emergency-box, containing the following articles, and directions for giving medicines:

Antiseptic-tablets (bichloride mercury)	Bottle	1
Bandages		6
Beef, extract	Bottle	1
Calomel, tablets	Bottle	1
Cathartic-tablets, compound	Bottle	1
Diarrhœa and Cholera tablets	Bottle	1
Lead- and opium-tablets	Bottle	1
Lint	Yards	2
Mustard-plasters	Box	1
Packages, first-aid		6
Plaster, rubber	Roll	1
Quinine pills (3-grain)	Bottle	1
Soda, bicarbonate	Can	1
Tourniquets, field		3
Tourniquets, rubber		2
Vaseline, carbolized	Jar	1
Whiskey	Bottle	1
30. One set of thrum-mats for muffling oars.
31. One set of arm-curtains with fittings complete.
32. A two-foot red wigwag signal-flag and staff.
33. One answering-pennant and staff.
34. One boat distinguishing-flag.

35. Oil lantern, with shutter for signalling, provided with wicks and ready for filling. If lantern is not fitted with shutter, it will be provided with a canvas screen. When it is lighted and not in use it will be carried in the boat-bucket.

36. One bottle of illuminating-oil.

37. Boat-Signal Code (contained in both the "Boat-Book, 1905," and "Boat-Signals, 1898").

COOKING-UTENSILS.

16. These are supplied only when required. For example, at abandon-ship they are undesirable complications, excepting a kettle and mess-gear. Boat expeditions may or may not require them, depending upon the nature of the service.

17. Complete cooking-outfit for boat expeditions, when it is expected to do cooking in the boat, would consist of:

(1) Boat-stove. These boat-stoves are supplied to sailing-launches, and one stove to each vessel not carrying a sailing-launch. If boat-stoves are not supplied, a galvanized iron bucket, or pan, filled with sand, can be used as a substitute.

(2) Fuel.

(3) Iron mess-kettle and frying-pan.

(4) Mess-gear. At least 6 plates, 6 knives, 6 forks, 6 spoons, 6 cups or bowls.

18. (1) If cooking in the boat is anticipated, additional portions of the ration, such as butter, salt, pepper, sugar, coffee, etc., would be necessary.

(2) These can be most expeditiously supplied by the man who provides mess-gear, if they are to be supplied in small quantities. If providing for a considerable force ashore, the amounts of each shall be carefully determined, and provided by the commissariat.

(3) In actually abandoning ship, the man providing mess-gear should provide a small amount of these items, if landing is probable, since, though no cooking will be done in the boat, they might be necessary on shore.

PROVISIONS.

19. (1) The amount of provisions carried under various circumstances will depend upon the probable length of service, and the probable requirements of the expedition.

(2) Bread will be carried in watertight tins. These should be supplied in wooden boxes, in order to preserve the tins intact.

(3) Fresh water is carried in breakers, not to contain more than 20 gallons each.

(4) Canned meats, carried in wooden boxes in which it is shipped.

(5) Coffee, tea, sugar, and salt, if for a small expedition, are carried in small waterproof packages; if provided by the com-

missariat for a considerable body of men, in the original cases in which received on board ship.

(6) Other portions of the ration will be carried in actual service, when time and circumstances permit.

20. (1) When men leave the ship in considerable force, or for a longer period than two days, the commissary-officer will ration them, arranging all details; but in actual expeditions men who leave the ship ahead of the commissariat shall carry the emergency-ration and the regular ration will be forwarded later. See Arts. 20, par. 4, and 72, par. 5.

(2) The following is suggested as a basis per 100 rations to be supplied by the commissariat:

Article.	100 rations.
Bread (hard or soft).....	100 pounds.
Corned-beef (canned)	75 “
Baked-beans (canned)	45 “
Coffee (roasted and ground)	8 “
Sugar (granulated)	15 “
Tomatoes (canned)	100 “
Salt (table)	2 “
Pepper (black)	4 ounces.

(3) In calculating the amount of provisions to be carried in a boat, at abandon-ship, one ration will consist of 1 pound of hard bread, $\frac{3}{4}$ pound of canned-meat, and $\frac{1}{2}$ gallon of water. After calculating by this rule the amount of provisions necessary for the required three days, take the number of boxes or breakers most closely approaching this amount. In actual abandoning ship, boats will carry as many provisions as possible with safety.

(4) For short expeditions (not over two days' duration) special commissary arrangements will be unnecessary. Each man will be provided with the emergency-ration, consisting of hard bread, 20 oz.; corned- or roast-beef, one 2-lb. can; sugar, 8 oz.; ground coffee, 4 oz.; the last two items in small bags. This ration is carried in the haversack. Each man will carry a canteen filled with water, and in addition each boat will carry at least 2 days' water ($\frac{1}{2}$ gal. per day) for each man in the boat.

HOSPITAL-BOAT.

21. (1) The boat with the ambulance party will carry the medical officer and a large medicine-chest containing stimulants and medicines. Each article will be labelled in English, and distinctly marked with directions for administering and quantity of dose, in terms that any one can understand. The medical officer will also carry a set of surgical instruments, stretchers, and other necessary surgical conveniences.

(2) The hospital-boat will carry no arms whatever, and will fly a red-cross flag on a staff in the bow.

ARTILLERY-BOATS.

22. (1) If gun is to be used in boat only:

- (a) Boat-gun mount complete, secured to deck-plate.
- (b) Boat-gun, with all implements for service of the gun.
- (c) Box of accessories and spare parts.
- (d) Ammunition.

In short, the same supplies should be provided as are required for the service of the gun on board ship.

(2) If gun is to be landed:

- (a) Field-carriage, with all implements for service of the gun.
- (b) Shifting-spar, grommet and lashing, and skids or other means for landing the gun.
- (c) Haversack for landing armorer's tools, also accessories, spare parts and all articles necessary for the service of the gun.
- (d) Ammunition.

(3) If gun is to be used both in the boat and on shore, both the boat-mount and field-carriage will be provided, and accessories, spare parts, etc., as above enumerated.

(4) The equipment of the artillery-boat for drill will be in all respects the same as if the gun were actually to be fired.

AMMUNITION.

23. (1) Ammunition will be carried in the chests in which supplied. The amount will be specified in every case, and will depend upon the nature of the service.

(2) The following is the minimum amount to be supplied:

- (a) *3-inch field gun:* Filled ammunition-boxes (32 rounds).
- (b) *1-pdr. R. F.:* Filled ammunition-box (60 rounds).
- (c) *Gatling or Colt:* 1000 rounds.
- (d) *Rifle:* 100 rounds for each rifle.
- (e) *Pistol:* 48 rounds for each pistol.

SENIOR-OFFICER'S BOAT.

24. The boat conveying the commander of the expedition shall carry the following additional articles:

(1) One set of signals complete. The distinguishing-number or pennant for each boat is the signal-flag corresponding to the boat-number, displayed over the Boat-Code Flag B.

(2) One set of Very's night-signals, and at least six rockets.

(3) Attention is invited to Art. 80, (5).

PART III

LIFE-BOATS.

AT SEA AND IN PORT.

25. At sea.—(1) When at sea, every ship shall at all times keep on each side, ready for lowering, a boat which is best adapted as a life-boat.

(2) At the beginning of every watch at sea, the officer-of-the-deck shall have the life-boat crew of the watch mustered abreast the lee boat, and the coxswain of the life-boat crew of that watch shall satisfy himself by personal inspection that *both* life-boats are ready for lowering, and shall report the fact to the officer-of-the-deck.

26. A life-boat is secured for sea, *i. e.*, ready for lowering, when in the following condition: Boat at the davits, griped in, falls clear, detaching apparatus ready for detaching at the word, steering-oar shipped in crutch, oars fitted with trailing-lines and ready for getting out quickly, rowlocks shipped and fitted with lanyards, plug in, sea-painter half-hitched around forward thwart, life-lines bent to span, life-belts in boat, lantern filled and trimmed (and at night, lighted), sails bent, and all other articles of the boat-equipment in the boat and ready for use, with two days' water and provisions for the crew. When the coxswain of the life-boat crew of the watch reports a life-boat ready for lowering, it is understood that the boat is in the above condition and that the crew of the watch have been mustered, each man abreast his own thwart (or station) of the lee boat, and that each man understands his duties at "Man-overboard." In lowering, the officer or coxswain in charge of the life-boat will give the command for detaching.

27. In port.—(1) The U. S. Navy Regulations require that "In port, one or both life-boats shall be kept ready for immediate use from sunset until colors the next morning;" hence when there is no suitable boat in the water ready for immediate use as a life-boat, at least one boat suitable for this purpose must be kept ready for instant lowering. This is particularly necessary when the boats which are in the water are heavy and unwieldy, or are so secured that they could not be quickly used in an emergency, or in rough weather, or in a strong tideway. The officer-of-the-deck shall require the coxswain of each life-boat to report to him, each day at sunset, the condition of his boat as regards readiness for service. If the regularly designated life-boats for port service are reported as not being available for use, he will at once take steps to provide another boat for this duty.

(2) In port, the regular crews of the designated life-boats will act as life-boat crews from "turn to" in the morning watch until 9.00 p. m.; from 9.00 p. m. until turn to in the morning watch, the anchor-watch will be the life-boat crew, and when mustered the men shall be assigned their stations. The petty-officer of the anchor-watch will report that the crew have been stationed and that the life-boat is ready for use.

(3) Owing to its handiness, a dinghy is well suited for use as a life-boat in port in good weather, and under such conditions it may be designated as the life-boat for port service. The boats designated for use as life-boats in port are required to carry only the usual equipment for boats in port, but the gear must be in order and ready for instant use, and the lantern must be ready in the boat for lighting, or else a lighted lantern ready for use must be kept at hand on deck.

Notes on Life-Boats.

28. (1) Life-boats should be gripped securely against their strongbacks, with chafing-pads between the boat and the strongbacks; and the gripes, secured either by toggle or pelican hook, ready for instant freeing.

(2) If gripes stretch and become slack, they should be set up taut.

(3) At night, boat-falls should be coiled down on deck, clear for running; during the day the coils may be triced up to davit with becket and toggle.

(4) The sea-painter is led from a point well forward on the ship, outside of everything, and secured to the inboard side of the forward thwart in such a manner that it can be readily cast off; if necessary it is stopped up out of the water by a rope-yarn.

(5) The knotted life-lines, one for each member of the crew, hang from the span for the use of the crew in case of accident in lowering or hoisting.

(6) An axe or hatchet should be kept at hand, ready for instant use in case of a jam while lowering.

(7) The life-belts should be placed, one under each thwart, and one under the stern-sheets, and each man in the life-boat will put on a belt before the boat is lowered. This is necessary because of the danger of the boat swamping alongside in rough weather.

(8) If the lantern is not provided with a shutter, it will be fitted with a canvas screen, and when lighted and not in use will be put in the boat-bucket.

(9) Life-boat crews for each watch are designated on the ship's station-bill. When a life-boat crew is mustered, the men will muster in line abreast their boat (or the lee boat), in the order of their thwarts, facing inboard; men stationed to lower will be abreast their respective davits, and will personally see that the falls are clear.

(10) The proper members of the crew will be permanently stationed for unhooking the falls, tending the sea-painter and for performing other duties in connection with lowering. The life-boat crew of the watch, including the men stationed for lowering, for observing the man, for signalling, etc., are not to go below the upper deck without permission, except for meals.

(11) At night the life-boat crew of the watch, and other men stationed in connection therewith, will remain near their stations.

LOWERING A LIFE-BOAT (OR OTHER BOAT) AT SEA IN BAD WEATHER.

29. (1) At the call "Man-overboard" (which may be given by word of mouth or sounded on the bugle), every member of the life-boat crew of the watch goes to his station on the *run*. The lee life-boat should be manned. If there is any doubt about which boat is to be lowered, the officer of the deck immediately indicates it by the command, "Clear away the starboard (or port) life-boat."

(2) The men take their seats on the thwarts; each man immediately puts on a life-belt, gets his oar ready, and then, if not otherwise engaged, seizes a life-line as a safety precaution in case of accident.

(3) If there is not a good lee, the officer-of-the-deck will make one by altering the course of the ship. It is customary to bring the sea a little on the bow, but in this position the lee for the boat is far from perfect, as the ship will roll and pitch considerably, and the waves wash along the lee side. Some seamen prefer to bring the sea on the quarter rather than on the bow, while others advise lying in the trough of the sea, notwithstanding the heavy rolling. The best position will doubtless depend upon the build and trim of the ship, and the nature of the sea.

(4) Oil should be used in any case, both ahead and astern of the boat.

(5) The ship should be kept moving slowly ahead. A sea-painter, from well forward, should be brought into the boat through the inboard, bow rowlock, and a turn taken around the inboard end of the forward thwart.

(6) To keep the boat from swinging, frapping-lines may be passed around the falls, the ends leading inboard, to hold the boat close in to the side as it is lowered. In some ships jackstays with traveling lizards are fitted from the davit-heads to the side of the ship. A turn of the lizard is taken under a thwart, or around the standing part of the fall, and the boat is held near the side, as by the frapping-lines above described. Under no circumstances should the lizard be secured to the boat so that it could jam; the end must be held in the hand.

(7) The great danger, both in lowering and immediately afterwards, is that the boat will be dashed against the ship's side. A

sea-painter brought in on the inner bow of the boat, as already described, helps to sheer her off as she strikes the water. The coxswain sheers the bow out by throwing the *stern in* with the steering-oar as the boat strikes the water.

(8) The after fall is always unhooked first.

(9) Under no circumstances, short of the most imperative necessity, should a boat be lowered while the ship has sternway, and it is always *desirable* to have a little headway. There is much difference of opinion as to the speed at which it is safe to lower a boat—an important question in picking up a man overboard. Many officers having seen boats lowered without accidents at speeds as high as eight and ten knots, maintain that it is perfectly safe to lower at this speed. A more conservative view fixes the maximum at something like half this speed. It is safe to say that there is far less danger at five knots than ten, and most practical men would prefer to wait a little longer rather than to take the chance of having to deal with a whole boat-crew in the water.

(10) When all is ready the officer-of-the-deck, or the officer in charge of the lowering, commands LOWER AWAY TOGETHER! The bow and stroke oars tend the falls to keep them clear and to keep the blocks from striking other members of the crew when let go. In case the tumbler-hook is used, these men grasp the tumbler-lanyard, and as soon as the boat is water-borne, unhook the fall, in case it is not unhooked automatically. Should the boat not be supplied with detaching apparatus, these men unhook the boat-falls—the *after fall first*—as soon as possible after the boat touches the water. Men in the waist thwarts hold the boat off, if the ship is rolling. The second bowman tends the sea-painter, which is hauled taut and brought in through the inboard bow rowlock before lowering. He takes a turn with the painter around the thwart, holding the end in his hand. It should never be made fast.

(11) In lowering a boat the falls must invariably be lowered together, and in rough weather smart lowering may be required.

(12) If the boat is held in by lizards traveling on jackstays, or by frapping-lines around the falls, some of the men in the waist should breast the boat off the ship's side with the boat-hooks.

(13) Have an axe or hatchet handy in case anything should jam at a critical time.

(14) When the boat is a short distance from the water, the officer of the boat, or in his absence the coxswain, lets go the detaching apparatus, or gives the command LET GO! If the boat is not fitted with detaching apparatus, as soon as boat is water-borne, the boat-officer or coxswain commands LET GO THE AFTER FALL!, then, LET GO THE FORWARD FALL! The coxswain gives the boat a sheer out. The greatest danger occurs at this instant, as there is always a danger of the boat being dashed against the ship's side. For that reason the coxswain should give the *stern a*

sheer in, to get the *bow out*. The strain on the sea-painter assists to sheer the bow out. When clear of the ship's side, the officer or coxswain directs the second bowman to cast off the sea-painter; thwartmen get out their oars as soon as possible, and the boat makes the best of her way to the rescue.

HOISTING A LIFE-BOAT (OR OTHER BOAT) IN A SEAWAY.

30. (1) The same general principles of seamanship apply as in lowering. It is preferable for a ship to have a little headway on, in case she is under way. The important point is to keep the boat off the ship's side to prevent it being injured.

(2) The boat comes alongside, a lee having been made for her, and in case of a heavy sea, oil should be used freely. Oars are boated, before getting alongside, as soon as possible after receiving the sea-painter, which should always be hove to her.

(3) The bowman seizes the sea-painter and takes a turn around the forward thwart. The boat should then be hauled under the davits by manning the sea-painter on deck.

(4) Tend the ship's helm carefully to retain a lee.

(5) Frapping-lines, traveling lizards, etc., will, if necessary, be used as in lowering. Similarly, thwartmen will, by the use of boat-hooks, keep the boat from swinging against the ship's side.

(6) If the ship has considerable way on, a line should be led from the stern of the boat to a point well aft on the ship, to prevent the boat from lurching forward when she leaves the water.

(7) The boat-falls should be well overhauled, led along the deck so that the men have a clear hauling space, and *they must be well manned*. The boat should never have to wait for preparations on deck.

(8) All being ready on deck, stand by, wait for a smooth time, hook forward, then aft, haul taut, hoist away. Men should run away with the falls as the ship rolls toward the boat, which should be run up quickly but steadily. If the winch is used, the falls should be taken around the barrel, which should be turning at the desired speed before the order *Haul taut!* is given.

ALTERNATIVE METHOD OF PICKING UP A MAN OVERBOARD.

31. (1) The following method of picking up a man, in good, moderate or rough weather, with a quick-turning steamer, commends itself to many seamen.

(2) At the call, "Man-overboard," ascertain the position of the man, put the helm hard over, away from him, and handle the engines so as to make a short turn without stopping. If possible, stop the engine on the side on which the man falls.

(3) As the ship turns, clear away and man the life-boat which is to be lowered, at the same time keeping a good watch on the

man; his approximate position will be marked by the life-buoy. As the ship approaches the man, toward the end of the turn, maneuver her so as to bring her just to windward of him, and slow the engines so that she will not have too much speed for lowering when she reaches this position. Lower and let go with such precautions as wind and sea demand; stop the ship and prepare for hoisting.

(4) **The advantages of this method are:**

(a) That the boat may be dropped near the man, so that the coxswain can steer straight for him without being signalled to;

(b) That there is plenty of time to get the boat ready for lowering, and consequently less risk due to haste;

(c) That the boat has a short leeward pull to the man, and while the interval before the boat is in the water may be longer, the interval before she reaches the man would generally be shorter;

(d) That the officer-of-the-deck has better control for regulating the speed at which he is to lower the boat; and

(e) That, the interval between the alarm and lowering the boat being greater, there is less chance of accident from excitement and confusion.

LIFE-BUOYS.

32. (1) In connection with "Man-overboard," attention is invited to the regulations concerning life-buoys.

(2) The Navy Regulations require that at all times at sea, and where anchored in a strong tideway in port, an efficient person be stationed to let go the life-buoy. Except in small ships, one man is usually detailed for each life-buoy. These men also act as look-outs, and it is important that they clearly understand their duties.

(3) Men on this post must realize that should a man fall overboard, his life will depend largely upon the intelligence and alacrity with which they perform their duty. They must, therefore, know (a) *how* to let go the life-buoy; and (b) *when* to let it go.

(4) Ordinarily life-buoys are let go by pulling a toggle, which releases the buoy, allowing it to fall in the water. Should it not fall of its own accord, it is probable that a slight blow will cause it to do so. The men on that post should, however, understand how to cause it to drop in case the toggle carries away, the mechanism jams or the buoy fails to fall through any cause. They must, above all, understand *that the buoy must be dropped immediately in some way*, and that it is insufficient for them to simply make a routine effort to drop it, and then report that they cannot do so. To familiarize the men on this post with the operation of the life-buoy, it is well to have them present occasionally when the gunner tests the life-buoys in making preparations for sea.

(5) The question as to *when* to let the life-buoy go requires intelligence and composure. A cool, intelligent lookout will let the buoy drop within a few feet of the man overboard, while if somewhat excited, or if he does not clearly understand his duties, he may drop it long before the man is abreast the buoy, or long after he has passed.

(6) At the call "Man-overboard," the life-buoy lookout should endeavor instantly to ascertain the side on which the man fell and to *get sight of him*. Then drop the buoy as soon as possible *after* the man is abreast the buoy, so that it will be between him and the ship, toward which he naturally faces and swims.

(7) If the man cannot be seen, the lookout can usually determine the side on which he fell, as he will see many of the people about decks go to that side. Then, to avoid the possibility of dropping the life-buoy on the man (instances are recorded where men have thus been killed) the opposite buoy should be dropped when judged to be abreast the man in the water.

(8) If the man is sighted after the first buoy is dropped, and it is then seen that the second buoy can be dropped nearer to him, it should be let go; but as a general rule, the second buoy should be kept fast (unless it is really necessary) for use in case men fall overboard in lowering or hoisting the life-boat.

(9) The man in the water should swim to the life-buoy and await the life-boat. Life-buoys should be dropped frequently when the crew are in swimming, in order to familiarize the men with their use.

(10) The above instructions are for the guidance of the life-buoy lookout in case he hears no orders and must, therefore, act upon his own initiative. He will, of course, strictly and promptly obey any commands that he may receive from proper authority, regardless of the above instructions; but as the life-buoy, to be of use, must be dropped promptly, the lookout must clearly understand that if no orders have been received by the time it is necessary to drop it (as indicated above), he must drop it at once.

(11) Modern vessels are so large, and life-buoys so far removed from the officer of the deck, that it is important that the life-buoy lookouts clearly understand the above general principles, and then, in the absence of orders, that they be governed by their common-sense.

(12) After dropping the buoy, the lookouts should keep the man in sight until the persons specially detailed for this purpose reach their station in the after rigging, and get the bearing from the life-buoy men. If one lookout is attending both buoys, it would be unwise for him to leave his station to go into the after rigging as a lookout, but if there are two life-buoy lookouts, each may be permanently stationed to go in the rigging and keep a lookout on the man after his own buoy has been let go.

SIGNALS FOR LIFE-BOATS.

33. (1) **Signalmen, previously detailed,** man the rigging and keep their eyes on the man in the water. Signals hoisted at a yard-arm indicate the direction the boat must pull. A blue flag (No. 3) indicates that the boat must pull to the right of the line from the ship to the boat. A red flag (No. 1) indicates boat must pull to left of line from ship to boat. No. 2 indicates boat must pull straight away from ship. No. 0 indicates boat must pull straight toward ship.

(2) At night these same numbers, made on the electric night-signals, will be used; or, in the absence of a signal-set, Very's night-signals will be used, as follows: red star instead of red flag; green star instead of blue flag; a bracket instead of No. 2; and a rocket instead of No. 0. At night the boat will acknowledge signals by flashing the lantern. During the day the above signals will be obeyed without answering.

(3) In the case of a "man-overboard" at night when under steam and *in formation*, a ship shall, in addition to making the prescribed signals for stopping or going astern, burn a *blue light*. It is the duty of the ship next astern, if in column, also to burn a blue light, lower her life-boat and assist in the search. When the man has been picked up, or the search abandoned, a *blue light* will be burned by each ship whose boats have been lowered, to show that she is in condition for steaming ahead.

PART IV

DRILLS AND EXERCISES.

TACTICAL EXERCISES.

34. (1) For tactical purposes, the boats of each ship will be numbered consecutively, beginning with No. 1.

(2) These numbers will be assigned in succession beginning with the steamers (1st, 2d, 3d, etc.), then sailing-launches (1st, 2d, etc.), then cutters, whaleboats, barges, gigs, and dinghies, each in the order of their ship's numbers.

(3) These numbers (indicated by the corresponding flag or flags of the Navy Code) hoisted over the boat-code flag (B, International-Code), will be the boat's distinguishing-call.

(4) Each boat shall carry at drill a white distinguishing-flag in the bow.

(5) This flag shall be rectangular, 26 by 18 inches, with the ship's distinguishing-letter and the boat's number, painted upon it in black letters and figures, to read from staff to fly, and the staff to show 4 feet above the rail. Hospital-boats shall display the Geneva cross in the bow, instead of her boat-number, the dimensions of flag and staff being the same as prescribed for other boats.

35. (1) Unequipped boats are those carrying only the regular boat equipment, which is kept at all times in the boat. (See Art. 13.)

(2) **Equipped boats** are those which are equipped for landing in accordance with these instructions. They will always contain arms, ammunition, and the amount of provisions and water mentioned under Article 20, pars. 1 and 4, unless the commissariat actually accompanies the expedition, in which case only arms, ammunition, and filled canteens are required.

(3) **A division of boats** consists of the group of boats of each ship.

(4) **A flotilla** consists of two or more divisions of boats.

36. (1) The flotilla will be exercised as often as possible in tactical maneuvers. It is undesirable to exercise the flotilla at extensive tactical maneuvers when it is equipped for landing, though it should be frequently and thoroughly exercised, when so equipped, at actual landing and at the necessary tactical evolutions pertaining thereto.

(2) Tactical evolutions are chiefly for the training of the officers and coxswains (with a view to utilizing this training at some other time when the boats are equipped for landing) and hence

tactical exercises can be carried out as advantageously with an unequipped as with an equipped boat.

(3) When boats are called away for exercise under sails or oars, no arms or equipments will be provided. The regular boat-gear will, however, be carried unless the nature of the exercise renders it desirable to leave some of it on board. When boats are called away for exercise as a flotilla or for landing, dinghies will not be required to go.

(4) When a preparatory signal for getting out boats is made, all preparations will be made on deck; davits rigged out and boats made ready for lowering.

(5) If the signal indicates that the exercise will be for equipped boats, all necessary articles are to be provided abreast the boats, but no article will be passed into a boat, nor will any boat be lowered, until the signal of execution is made.

(6) At the signal of execution (whether preceded by preparatory signal or not) all boats are to be lowered, equipped, manned, and formed as prescribed. If for equipped boats, preparations will be made as if preparing for some actual specified service in accordance with Article 72.

37. (1) When the flotilla is called away for exercise, the divisions of boats will first form in column, on the starboard side of their respective ships, the leading boat abreast the lower boom, in the following order: steam-launches, sailing-launches, cutters, whaleboats, gig. The battalion commander, in one of the steamers, will lead the column.

(2) When ready, the divisions proceed to form where directed in *line of columns*; the steamers towing the other boats of the division; the order of the columns being the same as the order of their ships in line, as prescribed for the squadron; intervals between columns four boats' lengths, distance between boats (from bow to stern) one boat's length. Hospital-boats when present will be in the rear of their columns or lines.

(3) **A boat's length** in the above paragraph will, for the sake of uniformity, be taken as 40 feet. Distance will be four boats' lengths, and half-distance two boats' lengths; all of the above distances are measured from stem to stern.

38. Being in "Line of columns," when tactical evolutions begin, the leaders of the columns will open out until their intervals are the same as their distance apart in line, which will vary with the number of boats in each division.

39. (1) Being in the above formation, to form for landing, first head the line of columns toward the landing place. Then the formations described in *The Landing-Force and Small-Arm Instructions* will be assumed, steam- and sailing-launches with artillery casting off and assuming position on the flanks, while the main body of the column (boats carrying infantry) form line and

head in towards the beach. If machine or small R. F. guns are carried in infantry boats, they will be used to sweep the beach from their position in the general line.

(2) If the boats of a single ship are called away for landing, they will form in column, in the above-mentioned order, as soon as they shove off from the ship, and will be taken in tow by the steamer. The tow then heads in perpendicular to the landing place. In forming for attack, boats cast off and form line, artillery steamers and sailing-launches take position on the flanks and cross their fire, as described under instructions for landing.

(3) Being in tow, and preliminary to forming line for landing as described above, the leading steamer signals to the tow as follows:

(a) *Three blasts:* Oars get ready and prepare to cast off.

(b) *Two blasts:* Up or out oars.

(c) *One blast:* Cast off and let fall.

40. (1) The flag-boat of a division, when exercising as a part of a flotilla, will lead its column. When the division is exercising independently it may either lead the column, or it may leave the formation and be free to take any position.

(2) Similarly, the flag-boat of a flotilla may either lead the column, or it may leave the formation and take the position from which the flotilla can best be maneuvered.

(3) Flag-boats will, when possible, be steamers, except when boats are being exercised as a division under sail, in which case a sailing-launch or other boat may be used.

(4) For tactical drills, flag-boats should be fitted with signal masts and yards, and furnished with speed cones, 12 inches high and 8 inches in diameter at the base.

41. (1) Boat-drills shall not be confined to the seaman class, but shall, so far as possible, include all classes of enlisted men. Special attention shall be paid to elementary boat-exercises for marines and the engineer-force, and they should be encouraged to become good oarsmen.

(2) **The landing-force** shall frequently be embarked and landed in the manner that would be required under service conditions. Mustering and equipping the force is not sufficient to develop or maintain the skill of the crew, or to develop or exercise in their proper duties the special details, staff officers, etc. Hence landing-exercises should be complete, thorough, and deliberate.

(3) Similarly, at abandon-ship it is always preferable actually to lower the boats and embark their crews, but as it is important that each man be kept constantly familiar with his principal duties at this evolution, it is preferable, in cases where lowering boats is impracticable, to provide articles and muster abreast the boats rather than omit the exercise entirely.

ORDINARY SERVICE.

BOATS UNDER OARS.

COMMANDS.

42. The commands given in Tables I and II below are prescribed to cover ordinary cases of a boat manned alongside, or at a landing, and thence making passage to a landing or to another vessel.

Table I.

1. STAND BY THE OARS!
2. SHOVE OFF!
3. OUT OARS!
4. GIVE WAY TOGETHER!
5. IN BOWS! or, TRAIL BOW!
6. OARS! followed by WAY ENOUGH! or WAY ENOUGH! without the command OARS!

Table II.

1. STAND BY THE OARS!
2. UP OARS!
- 1 and 2. Given before boat is reported ready.
3. SHOVE OFF!
4. LET FALL!
5. GIVE WAY TOGETHER!
6. IN BOWS!
7. STAND BY TO TOSS! Toss! or, OARS! followed by WAY ENOUGH! or WAY ENOUGH! without the command OARS!

43. (1) The commands in Table I will always be used with single-banked boats. With these boats the oars will be in their places in rowlocks, blades in the water, and oar trailing fore-and-aft, before the boat is ready to receive passengers.

(2) With all boats having awnings spread. If the boat is double-banked, the oars will remain in the boat until the command OUT OARS! At the command STAND BY THE OARS! the most convenient thwartmen will cast off the awning-stops and secure them after the oars are out.

(3) With laden boats, working-boats, boats carrying visiting-parties, all pulling-boats at sea, or in rough weather in port, and with all pulling-boats after sunset.

44. In all other cases than those specified above, the commands in Table II will be used, in port or in smooth water, for double-banked boats having rowlocks that permit of "letting fall." For example, this table would be used for all double-banked running-boats, for all special boats carrying commissioned, warrant, or appointed officers, and, in general, on all occasions not excepted by notes under Table I (See Art. 43).

45.

Table III.

Special Commands	Purpose for which Given.
OARS!	(1) To stop pulling for any purpose, keeping the oars out. (2) To salute.
TRAIL!	(1) To salute. (2) To pass obstructions. For the latter, oars of either side may be trailed independently.
HOLD WATER!	To check headway or sternboard. The oars of either side may hold water independently. Requires care if boat has much headway.
STERN ALL!	To acquire sternboard. Should not be given when boat has much headway. When boat has headway, should be preceded by HOLD WATER!
BACK STARBOARD! (or PORT).....	To turn. Should HOLD WATER! before backing, if boat has much headway.
BACK STARBOARD, GIVE WAY PORT! To (or vice versa.)	To turn quickly when boat has little or no headway.
STAND BY TO TOSS! TOSS!.....	(1) To salute. (2) In going alongside, when it is not desirable to boat the oars. The habitual command to be used when coming alongside with double-banked boats on official or dress occasions.
BOAT THE OARS!.....	To get the oars in the boat.
POINT THE OARS!.....	To shove off a grounded or beached boat.

NOTE.—Thwarts and oars are numbered from forward. Double-banked thwarts are designated by No. 1, starboard, No. 1, port; No. 2, starboard, No. 2, port; etc. The thwarts next to the bow and stroke are also properly designated as second bow and second stroke.

Explanation in Detail.

Ordinary Ship's Service which Permits Use of Commands Given in Table I.

46. Suppose a cutter manned at the gangway, bowmen standing in fore-sheets holding on with boat-hook to grab-ropes or jack-stay, oars boated. The coxswain has orders to shove off and go in for a working-party. The coxswain commands and the crew executes the details as follows:

(1) **STAND BY THE OARS!**—Every man except the bowmen seizes his oar by its handle, and sees the blade clear of other oars. The oars should be shoved forward, over the gunwale far enough to bring the handle in the proper position, but should be kept fore-and-aft. If awnings are spread, the most convenient thwartmen cast off the stops.

(2) **SHOVE OFF!**—Bowmen shove bow smoothly away from ship's side with boat-hooks, at the same time shoving her a little ahead, if possible; the coxswain sheers her off with helm, and hauls ahead on stanchions of the gangway or on the grabrope, assisted as necessary by the inboard stroke-oar, who takes his seat as soon as possible and prepares to get his oar out with rest of crew. Fenders are rigged in by men abreast them. Bowmen place boat-hooks fore-and-aft amidships, seat themselves, and get their oars ready.

(3) **OUT OARS!**—Given when the boat is clear of the ship's side. Thwartmen throw blades of oars horizontally outward, allowing the leathers to fall in rowlocks, place both hands on handle, and quickly trim blades flat and directly abeam. This is the position of *Oars!* Bowmen throw their oars out at the same time as rest of crew, if they are ready. Otherwise they swing their oars out together, touching their blades forward to insure making the movements in unison, and bring them to the position of *Oars!* or take up the stroke with the remainder of the crew, as the case may be.

(4) **GIVE WAY TOGETHER!**—All the oarsmen take the full stroke, keeping accurate stroke with the starboard stroke-oar. Feather blades habitually. Bowmen get their oars out together and take up the stroke. (They may have gotten them out before the command **GIVE WAY TOGETHER!** in which case they give way with the other members of the crew.) The crew will continue to pull a strong, steady stroke, always using their backs, and maintain silence.

(5) **IN BOWS!**—Given as landing is approached, and while the blades are in the water. Bowmen complete that stroke, toss oars simultaneously to an angle of 45 degrees, and boat them together, seize boat-hooks, stand erect in bow, facing forward, holding boat-hooks vertical in front of them until needed.

(6) **OARS!**—Given when the coxswain estimates that the boat's headway will carry her to the landing, and while the blades are in the water. Finish that stroke and assume the position *Oars!* When in this position, if landing or gangway is clear of other boats, command **WAY ENOUGH!** The crew toss their oars simultaneously to an angle of 45 degrees and lay them in place in the boat, with as little noise as possible, rigging the blades entirely inside the gunwale. The stroke-oarsman next to the landing or gangway takes up a boat-hook, the men nearest the fenders place them over on inboard side, bowmen and stroke-

oarsman check headway, keep boat clear, haul alongside, etc., as necessary.

(7) Or, if preferable, and the skill of the crew will enable them to perform the movement together, the command **OARS!** may be omitted, and instead, command **WAY ENOUGH!** given when the boat's headway will carry her to the landing, and while the blades are in the water at the beginning of a stroke. Finish that stroke, and as the oars leave the water the men toss them simultaneously to an angle of 45 degrees, and boat them quickly and quietly, rigging the blades entirely inside of the gunwale. The stroke-oarsman next to the gangway or landing takes up his boat-hook; men nearest the fenders place them over on inboard side; bowmen and stroke-oarsman check headway, keep boat clear, haul alongside, etc., as necessary.

NOTE.—With a single-banked boat, the oars would be trailed when the above instructions require those of a double-banked boat to be tossed and boated. The oarsmen simply let go the handles, allowing the oars to trail in a fore-and-aft direction. The oars in this case are not boated until the command **BOAT THE OARS!**

Dress or Special Service, which requires use of Commands given in Table II.

47. If a cutter is called away as a running-boat, or on special duty to carry officers to another ship, in daylight, in good weather, in port, the oars will be brought to the position of *Up oars* before the boat is reported ready; the bowmen stand in fore-sheets holding on to the grabrope or jackstay, the inboard stroke-oar in stern-sheets holds on with boat-hook.

48. (1) The oars are brought to the position of *Up oars* by the commands:

(a) **STAND BY THE OARS!**—The same as under Table I; the blades will be kept clear of the bowmen's boat-hooks.

(b) **UP OARS!**—The oars, except the two bow and the inboard stroke-oars, are tossed quickly to a vertical position, blades trimmed in a fore-and-aft plane and in line with that of the stroke-oar, handles of oars resting on bottom-boards, outboard hand grasping loom of oar at height of chin, wrist of inboard arm resting on inboard thigh, and steadying oar.

NOTE.—The boat-officer or coxswain then reports to the officer-of-the-deck that his boat is alongside, ready for duty.

When all is ready and the officer-of-the-deck has given necessary orders to the boat, the boat-officer or coxswain commands:

(2) **SHOVE OFF!**—This command is executed as described in Art. 46, (2). As soon as possible, the inboard stroke-oar lays aside his boat-hook and gets up his oar without further command. If time permits, the bowmen get up their oars and await the command **LET FALL!** If, however, the command **LET FALL!** is given before their oars are up, they point their oars forward over the

gunwale, "kiss" the blades, swing them out, and take up the stroke, or come to *Oars!* as the case may be.

(3) **LET FALL!**—Given when the boat is clear of the ship's side. It may be necessary to let fall the forward oars before there is room for the after oars to clear the ship's side. This would be done by the command, 1, 2, and 3, **LET FALL!** or, 2 and 3 **LET FALL!** Other oars remain vertical until the command **LET FALL!** At this command all the oarsmen raise their oars vertically and drop the blades outboard into the rowlocks smartly and together, slipping the inboard hand to the handle of the oar, and come to position *Oars!* with both hands on the handle. Under no circumstances should the blades be allowed to touch the water in letting fall.

(4) **GIVE WAY TOGETHER!**—As described in Art. 46, (4).

(5) **IN BOWS!**—As described in Art. 46, (5).

(6) *Stand by to toss!* **Toss!**—The cautionary command is given as a warning to the crew. The command **Toss!** is given as the blades enter the water, and when the boat has sufficient headway just to reach the gangway or landing. The oarsmen complete that stroke, and then toss the oars quickly to a vertical position by pressing smartly on the handle with inboard hand, assisting the oar with the outboard hand under the loom. Lower handle to bottom-boards and assume position described at **UP OARS!** [See Art. 48, (1, b)]. The inboard stroke-oar lays his oar in the boat quickly after he has it at the vertical position, seizes boat-book, and assists to check headway and haul stern of boat into the gangway.

49. (1) The crew remain at the *Toss!* until officers leave the boat. They are then in position to *let fall*, when boat is ordered to lay off the quarter or to haul out to the boom.

(2) If it is desirable to lay the oars in the boat, it will be done by the command, **BOAT THE OARS!** at which each man lays his oar quickly and quietly in the boat.

(3) In rough weather or at night (when it is not desired to remain alongside with the oars at *Toss!*), the commands **OARS!** followed by **WAY ENOUGH!** or the command **WAY ENOUGH!** given alone, may be used, as described in Art. 46, (6) and (7).

Explanations of Special Commands given in Table III.

50. (1) **OARS!**—Given when blades are in the water. Finish that stroke and bring oars quickly to position of *Oars!* [Art. 46, (3)].

(2) **TRAIL!**—Given when blades are in the water. Finish that stroke, release the handle of the oar, allowing it to draw fore-and-aft, and trail alongside. If no trailing-lines are fitted, retain the handle of the oar in the hand. With a cutter having sunken row-

locks, lift the handle of the oar quickly when blade is in the water at middle of stroke, throw oar out of rowlock, and retain handle in hand.

(3) **HOLD WATER!**—Given when blades are in the water. Cease pulling, drop the oars in the water, and hold them perpendicular to the keel line, blades vertical. With considerable way on, especially in a laden boat, care in holding water is required to prevent carrying away the rowlock or gunwale, or the oar itself. Under these conditions, drop the oars in the water with the upper edges of the blades inclined forward, and gradually bring the blades vertical as way is lost.

(4) **STERN ALL!**—Given from positions of *Oars!* or *Hold water!* The oars are backed, keeping stroke and feathering as when pulling ahead.

(5) **BACK STARBOARD! (or PORT).**—Designated oars are backed as at **STERN ALL!** Generally when boats have way on, oars should not be backed until the headway is checked by holding water or laying on oars.

(6) **BACK STARBOARD, GIVE WAY PORT! (or vice versa).**—Given from the position of *Oars!* or *Hold water!* Proceed as described in Art. 46, (4) and Art. 50, (5).

(7) **Toss!** (This command should be generally preceded by cautionary command *Stand by to toss!*)—Given when blades are in the water or at the position of *Oars!* Complete the stroke, press smartly on the handle, and, with the other hand under loom near leather, bring oar quickly to vertical position, blades trimmed fore-and-aft and in line; hands as at the completion of *Up oars!*

(8) **BOAT THE OARS!**—Given from the position *Toss!* or *Trail!* (with boats using swivel-rowlocks). Place the oars, quietly and quickly, fore-and-aft in the boat. This command may be given from any position, but it is preferable, when time and room permit, to command **OARS! TOSS! BOAT THE OARS!**

(9) **POINT THE OARS!**—To shove off a boat that has grounded, stand facing aft, point the blades of the oars outboard and downward at an angle of about 30 degrees, ready to shove off at the command. If waves lift the stern of the boat, the united effort to shove off should be made just as her stern lifts.

51. When for any reason it may be desirable, the preparatory command *Stand by to* —! may precede the commands **Toss! TRAIL! HOLD WATER! STERN ALL!** or in fact any command of execution given in a boat. In order to secure precision and uniformity of movement, and in order to avoid taking the crew by surprise, cautionary orders should usually precede commands of execution, the crew thus being always prepared promptly to execute the command when it is given. These should only be used when necessary, since a multiplicity of cautionary or pre-

paratory orders detracts from the sharp, smart work that boats and their crews should exhibit.

NOTE.—The preparatory command for OARS! is *Stand by to lay on the oars!*

HANDLING BOATS IN A SURF.

52. (1) The most dangerous duty which a ship's boat is called upon to perform is landing through a surf. This requires greater skill than any other work in an open boat, and lack of skill or inattention on the part of the coxswain is so likely to result in a loss of life that a novice should never attempt to steer a boat through heavy surf to a beach. The skill necessary to make a successful landing through surf can be obtained only by practical experience gained first as an oarsman, and later as a coxswain.

(2) If it is absolutely necessary for an inexperienced crew to land through a surf, the safest method should be adopted, which is to back in, keeping bow to sea, and every time a sea approaches pull to meet it with a good headway, then back in as fast as possible after it passes.

(3) If this is impracticable, a fairly safe method is by towing a heavy drag over the stern.

(4) The great danger in landing through a surf is that of "Broaching-to." The breaker lifts the stern, forces it to one side until the boat gets broadside-on and capsizes. Sometimes, though rarely, a heavy sea gets under a boat, buries her bow, and turns her end over end.

(5) It should always be remembered that surf, when viewed from seaward, is exceedingly deceptive and is always much worse than it appears. On an open seacoast any surf visible from a small boat to seaward would probably be dangerous.

Management of Open Rowing Boats in a Surf.

53. The following rules are published by the Royal National Life-boat Institution:

I. **Rowing to Seaward.**—(1) As a general rule, speed must be given to a boat rowing against a heavy surf. Indeed, under some circumstances, her safety will depend upon the utmost possible speed being attained on meeting a sea. For if the sea be really heavy, and the wind blowing a hard, on-shore gale, an approaching heavy sea may carry the boat away on its front, and turn it broadside-on, or up-end it. A boat's only chance in such a case is to obtain such a way as shall enable her to pass, end-on, through the crest of the sea, and leave it as soon as possible behind her. If there be a rather heavy surf, but no wind, or if the wind is off shore and opposed to the surf, as is often the case, a boat might be propelled so rapidly through it that her bow would fall more suddenly and heavily after topping the sea than if her way had been checked.

(2) It may also happen that, by careful management, a boat may be made to avoid the sea, so that each wave may break ahead of her, which may be the only chance of safety in a small boat; but if the shore be flat, and the broken water extend to a great distance from it, this will often be impossible.

(3) The following general rules for rowing to seaward may therefore be relied on:

(a) If sufficient command can be kept over a boat by the skill of those on board her, avoid the sea if possible, so as not to meet it at the moment of its breaking or curling over.

(b) Against a head gale and a heavy surf, get all possible speed on a boat on the approach of every sea which cannot be avoided.

(c) If more speed can be given to a boat than is sufficient to prevent her from being carried back by a surf, her way may be checked on its approach, which will give her an easier passage over it.

II. Running Before a Broken Sea, or Surf, to the Shore (Flat Beach).—(1) The one great danger, when running before a broken sea, is that of *broaching-to*. To that peculiar effect of the sea, so frequently destructive of human life, the utmost attention must be directed. The cause of a boat's *broaching-to*, when running before a broken sea or surf, is that her own motion, being in the same direction as that of the sea, she opposes no resistance to it, but is carried before it. Thus, if a boat be running bow-on to the shore, and her stern to the sea, the first effect of a surf or roller, on its overtaking her, is to throw up the stern, and, as a consequence, to depress the bow; if she then have sufficient inertia (which will be proportional to weight) to allow the sea to pass her, she will in succession pass through the descending, the horizontal, and the ascending positions, as the crest of the wave passes successively her stern, her midships, and her bow, in the reverse order in which the same positions occur in a boat propelled to seaward against a surf. This may be defined as the safe mode of running before a broken sea.

(2) But if a boat, on being overtaken by a heavy surf, has not sufficient inertia to allow it to pass her, the first of the three positions alone occurs—her stern is raised high in the air, and the wave carries the boat before it, on its front or unsafe side, the bow deeply immersed in the hollow of the sea, where the water, being stationary, or comparatively so, offers a resistance; while the crest of the sea, having the actual motion which causes it to break, forces onward the rear end of the boat. A boat in this position will sometimes, aided by careful oar-steerage, run a considerable distance until the wave has broken and expended itself. But it will often happen that, if the bow be low, it will be driven under water, when, the buoyancy being lost forward, while the sea presses on the stern, the boat will be thrown end over end.

Or if the bow be high, or protected by a bow air-chamber, so that it does not become submerged, the resistance forward acting on one bow will slightly turn the boat's head, and the force of the surf being transferred to the opposite quarter, she will in a moment be turned broadside to the sea, and be thrown by it on her beam-ends, or altogether capsized. It is in this manner that most boats are upset in a surf, especially on flat coasts.

(3) Hence it follows that the management of a boat when landing through a heavy surf, must stop her progress shoreward at the moment of her being overtaken by a heavy sea, and enable it to pass her. There are different ways of effecting this object:

1st. By turning a boat's head to the sea before entering the broken water, and then backing in, stern foremost, pulling a few strokes ahead to meet each heavy sea, and then again backing astern. If a sea be really heavy and a boat small, this plan will be generally safest.

2d. If rowing to shore with the stern to seaward, by backing all the oars on the approach of a heavy sea, and rowing ahead again as soon as it has passed to the bow of the boat, thus rowing in on the back of the wave; or, as is practical in some life-boats, placing the after oarsmen with their faces forward, and making them row back at each sea on its approach.

3d. If rowed in bow foremost, by towing astern a pig of ballast or large stone, or a large basket, or a canvas bag, termed a "drogue," or drag, made for the purpose, the object of each being to hold the boat's stern back and prevent her being turned broadside to the sea or broaching-to.

(4) A boat's sail bent to a yard, loosed and towed astern, the yard being attached to a line capable of being veered, hauled, or let go, will act in some measure as a drag, and will tend much to break the force of the sea immediately astern of the boat.

(5) Heavy weights should be kept out of the extreme ends of a boat, but when rowing before a heavy sea, the best trim is deepest by the stern, which prevents the stern being readily beaten off by the sea.

(6) When running before a sea, a boat should be steered by an oar over the stern or on one quarter.

(7) The following general rules may, therefore, be depended on when running before, or attempting to land through a heavy surf or broken water:

(a) As far as possible avoid each sea by placing the boat where the sea will break ahead of her.

(b) If the sea be very heavy, or if the boat be small, and especially if she have a square stern, bring her bow around to seaward and back her in, rowing ahead against each heavy surf, sufficiently to allow it to pass the boat.

(c) If it be considered safe to proceed to the shore bow foremost, back the oars against each sea on its approach, so as

to stop the boat's way through the water as far as possible, and if there is a drag, or any other appliance in the boat which may be used as one, tow it astern to aid in keeping the boat stern-on to the sea, which is the chief object in view.

(d) Bring the principal weight in the boat towards the end that is to seaward, but not to the extreme end.

(e) If a boat worked by both sails and oars be running under sail for the land, through a heavy sea, her crew should, unless the beach be quite steep, take down her masts and sails before entering the broken water, and take her to land under oars alone, as above described. If she have sails only, her sails should be much reduced, a half-lowered foresail or other small head-sail being sufficient.

III. Beaching, or landing through a surf.—(1) The running before a surf or broken sea, and the beaching, or landing of a boat, are two distinct operations; the management of boats, as above recommended, has exclusive reference to running before a surf where the shore is so flat that the broken water extends to some distance from the beach. On a very steep beach, the first heavy fall of broken water will be on the beach itself, while on some very flat shores, there will be broken water extending four or five miles from the land. The outermost line of broken water, on a flat shore, where the waves break in three or four fathoms of water, is the heaviest, and therefore the most dangerous; and when it has been passed through in safety, the danger lessens as the water shoals, until on nearing the land, its force is spent and its power is harmless. As the character of the sea is quite different on steep and flat shores, so is the customary management of boats, on landing, different in the two situations.

(2) **On the flat shore**, whether a boat be run or backed in, she is kept straight before, or end-on to the sea until she is fairly aground, when each surf takes her further in as it overtakes her, aided by the crew, who will then generally jump out to lighten her, and drag her in by her sides. As above stated, sail will, in this case, have been previously taken in, if set, and the boat will have been rowed or backed in by the oars alone.

(3) **On the steep beach**, on the other hand, it is the general practice, in a boat of any size, to sail right on to the beach, and in the act of landing, whether under oars or sail, to turn the boat's bow half round, towards the direction in which the surf is running, so that she may be thrown on her broadside up the beach, where abundance of help is usually at hand to haul her as quickly as possible out of the reach of the sea. In such situations, we believe it is nowhere the practice to back a boat in stern foremost under oars, but to row in under full speed, as above described.

RUNNING A LINE.

54. (1) Coil the greater part of the line in the stern-sheets, but take end enough in the bow to make fast when you reach the landing. Pull away and let the ship pay out more line until you are sure of having enough in the boat to reach, then pay out from the boat. Always have plenty of good seizing-stuff for making all secure, and if you are to stand by the line, have an axe ready for cutting in case you are ordered to do so.

(2) If laying out with the tide, take less line in the boat than otherwise; if against the tide, it will save work to take all the line in the boat, pull up and make fast, then bring the end back to the ship. With a long line to be laid out in a strong current, it will usually be necessary to have several boats—one to run away with the end, the others to under-run the line at intervals, floating it and pulling up stream with the bight.

(3) If the line is to be secured to a post, put a bowline in the end before starting, and throw this over the post. Bend on a heaving line and let the bow oarsman throw this, if hands are standing by to receive it, or jump ashore with it himself, if necessary.

TOWING.

55. (1) In ordinary cases of towing—an *unladen boat* in a *smooth sea*—the towing boat passes clear of the oars of the tow (oars of tow should preferably be tossed to facilitate this), placing herself in line ahead, receives painter from the tow, secures it to ring-bolt in stern-post, and starts ahead immediately she has hold of the painter.

(2) The bowman in the tow must not give the towing boat his painter until she is in line ahead; he will then take in the slack of the towline, keeping a strain on it and gradually pay it out, thus getting way on the tow gradually. This latter precaution is particularly necessary if the tow is at all heavy.

(3) Though it is frequently impracticable, it is always preferable for the towing boat to give the tow a painter (instead of vice versa), which the tow should tend and keep ready for letting go in an instant. If this is not done, and the tow gives the towing vessel her bow painter, which is shackled in the bow, a hatchet or sharp knife should be kept at hand for cutting the towline in an emergency.

(4) If the tow is heavily laden, or the sea rough, the above method brings too much strain on the stem and stern-posts of the boats, hence in such a case the painter should be toggled to a stretcher between the two after thwarts of the towing boat and to the forward thwart of the tow. To steer a boat that is towing in this manner, bear the towline over on the quarter toward which it is desired to turn, for the helm will be of little use.

(5) Towing of ship's boats is now usually done by the steamers, which are frequently fitted with a span, the ends of which are secured to either quarter. This facilitates steering and is in all respects preferable to securing the towline to the shackle in the stern-post.

(6) When being towed astern of a large vessel, use a short scope so as to remain close under the counter, with the bow partly out of water. In casting off when there are other boats towing astern, be careful, before letting go, either to drop clear of them all with your towline, or be handy with your oars to avoid getting athwart the hawse of some of them.

(7) Except in the case of unladen boats in smooth water, a number of boats should never be towed tandem by their painters, for in a long tow this brings a considerable strain on stem and stern timbers of the foremost boats. To avoid this strain, the towing vessel should pay out sufficient line to reach the bow of the last boat, the other boats being secured to it by slip-lines at bow and stern.

(8) If towing alongside, have the towline from as far forward on the towing vessel as possible, either toggle it to the forward thwart (steadying it over the stem with a bight of the painter), or pass it through the forward rowlock on the side nearest the towing vessel. Pay particular attention to the steering.

CARRYING STORES.

56. (1) When carrying provisions, be careful with the oars as they are easily injured by letting stores fall on them. Keep all casks "bung up" and leave a space, or "well," under the after thwart for bailing the boat out.

(2) Have tarpaulins for covering bread or anything that will be injured by salt water or rain.

(3) While loading, make a large allowance for the roughness of the water you may have to encounter.

(4) Do not overload a boat, particularly with men, as it may result in loss of life. When carrying treasure always attach a buoy with a drift of line at least equal to the greatest depth of water on the route to be taken.

BOARDING A WRECK IN A HEAVY SEA.

57. (1) Whenever practicable, a vessel, whether stranded or afloat, should be boarded to leeward, as the *principal* danger is that the boat may collide against the vessel or be swamped by the rebound of the sea, and the greater violence of the sea on the weather side of the vessel renders such accidents more liable to occur on that side.

(2) If a **stranded vessel** is broadside to the sea, the chief danger in *boarding to leeward* is the possible falling of the masts, or

that the boat may be stove by the wreckage alongside. Under such circumstances it may be necessary to take a wrecked crew into a life-boat from the bow or stern of the wreck. In boarding a wreck that is stranded on a flat shore, life-boats usually anchor to windward, and veer down from a safe distance, until near enough to throw a line on board.

(3) In rescuing people from a drifting wreck, approach from leeward, taking care to avoid wreckage floating alongside. If there is much wind it is best to lay well off, throw a strong line aboard, have the people secure the line around their bodies, one at a time, and jump overboard, for if the boat gets alongside of a wreck which is rapidly drifting to leeward, there is danger of swamping, and much difficulty in getting her clear of the side.

(4) Should it be necessary to go alongside, it is preferable to run the bow or stern to the gangway or sea-ladder, keeping her headed at right angles to the ship's keel, with oars out ready for pulling or backing away.

(5) An exception to the usual rule of boarding a drifting vessel to leeward occurs in the case of a vessel of very low free-board, such as small schooners, etc. Board such craft on the *weather quarter* to avoid being stove in by her main-boom, chains, etc.

NOTES ON HANDLING BOATS UNDER OARS.

58. (1) In going into a crowded or difficult landing, pull easily and keep the boat under control with the oars as long as possible, laying on oars if necessary, and boating oars only at the last moment.

(2) In going through a narrow entrance get good way on the boat, then trail or toss the oars.

(3) Remember that a loaded boat holds her way much longer than a light one.

(4) In pulling across a current, try to get a range on two objects in line and steer by these to avoid being set down by the current.

(5) Having a long pull against the tide, run inshore where the tide is slacker than in midstream, and where there is sometimes a strong eddy.

(6) There should always be a lantern, filled and trimmed, in the boat, and boats should never leave the ship for a trip of any great length without a compass. Weather is liable to thicken at any time, and a boat without a compass would have difficulty in reaching a landing or returning to the ship. For this reason, boat-officers and coxswains of running-boats should at all times know the compass course between the ship and landing, and if they are away from the ship and it begins to thicken, they should at once observe the compass course before the ship is shut in.

(7) In steam-launches, owing to deviation of the compass, coxswains must understand that the only way to obtain a correct compass course is to put the boat-compass in its regular place, head the boat on the correct course, then read the compass course. If this is not done considerable errors are liable to occur.

(8) At sea no boat should ever leave the ship without a compass, water, and provisions and, excepting life-boats, all boats sent away from a ship at sea will carry rifles and ammunition.

(9) Never go alongside a vessel which has sternboard, or which is backing her engines.

(10) In coming alongside in a seaway or when a strong tide is running, warn the bowman to look out for the boat line which will be hove from the ship.

(11) If caught in a gale in an open boat, rig a sea-anchor by lashing the spars and sails together, sails loosed. Fit a span to this and ride by the painter. If there is oil in the boat, secure a bag of it to the sea-anchor.

BOATS UNDER SAIL.

SLIDING-GUNTER RIG.

Commands.

Duties.

59. (1) Being under oars, to make sail.

(a) WAY ENOUGH!.....Oars are boated as above described.

(b) STAND BY TO STEP!.....All hands cast off spar-covers.
Bowmen see step of foremast clear.

Starboard thwartmen launch mainmast forward until heel of mast is even with step, raise masthead.

Similarly, port thwartmen launch foremast aft, and raise masthead.

All the crew remain seated whenever their duties will permit.

(c) STEP THE MASTS!.....Stroke-oars guide heel of main into step.

Bow-oars guide heel of fore into step.

Starboard thwartmen stand on bottom-boards and raise mainmast.

Port thwartmen stand on bottom-boards and raise foremast.

Bow- and stroke-oarsmen get masts on proper slue and, when nearly vertical, guide them into step.

Bow- and stroke-oarsmen and 2d-bow and 2d-stroke cast off shrouds and set them up. If jib-boom is used, it is stepped by bowmen, after mast is stepped. In this case the 2d-bowmen set up the fore shrouds.

(d) LOOSE SAIL!.....Stroke-oarsmen cast off sheet from main and take place in stern-sheets with main-sheet in hand.

2d-stroke attends main-brails. The other 2d-stroke mans main-topmast halliards.

Starboard stroke reports when all is ready aft.

2d-bowman casts adrift fore-sheet, passes it aft, and attends fore-brails. The other 2d-bowman mans fore-topmast halliards.

One bowman casts adrift jib-halliards, hauls head of jib down to the deck and mans jib-halliards. The other bowman sets up jib-tack and passes sheets aft on each side.

Starboard bowman reports when all is ready forward.

(e) WITH STARBOARD (or

PORT) SHEET. MAKE SAIL!..Topmasts are hoisted chock up, brails eased down and well overhauled, and jib hoisted.

Thwartmen convenient to sheets, haul them aft on designated side and *attend them*.

Never delay a sheet in a sail-boat.

Bowmen keep bright lookout ahead, starboard bowman when on starboard tack, port bowman when on port tack.

Lookouts keep coxswain fully informed of the proximity of obstructions or approaching vessel.

(2) **To tack.**

(a) **READY ABOUT!** Given as a warning for the crew to prepare for the evolution. The coxswain gives the boat a good full, waits for a smooth time, then eases down the helm. At the same time the man tending main-sheet hauls main-boom amidships slowly. (Do not haul it across mid-ship line for it then acts as a back-sail.)

(b) **EASE OFF THE JIB-SHEET!** Given when jib begins to shiver.

(c) **LET GO FORE-SHEET!** Given when foresail ceases to draw. If wind causes fore-sail to flap objectionably, smother it into the mast. If boat seems inclined to stop head to wind, haul jib-sheet to windward. This will be taken aback and pay her head around. If boat gathers sternboard, shift the helm.

(d) **SHIFT OVER MAIN-SHEET!** When wind is ahead, shift over the main-sheet and stand by to haul it aft when well around on the new tack.

(e) **HAUL AFT FORE- AND JIB-SHEETS!** As soon as the bow of the boat has passed the wind, haul aft fore- and jib-sheets, leaving the main-sheet slack, until boat is well around, then trim by the wind.

If the boat falls off too far from the wind, and there is little steerage way, haul aft main-sheet, and keep jib-sheet flying until she is brought up by the fore- and mainsail and the helm.

When nearly high enough, haul aft the jib-sheet and trim her by the wind.

(3) **To wear.**

(a) **STAND BY TO WEAR!** Given as a warning for the crew, to prepare for the evolution. The coxswain puts the helm up when ready.

(b) **EASE OFF MAIN-SHEET!** ... Given as her head pays off, in order to get the maximum effect of the mainsail in increasing her headway. Keep fast fore- and jib-sheets until wind is abeam, as they help pay her head off.

(c) **EASE OFF FORE- AND JIB-SHEETS!** Given when wind is a little abaft the beam. Slack the sheets off gradually, to give headway.

(d) **UP MAINSAIL!** Given when wind comes nearly aft. Brail up mainsail, leaving topmast halliards fast.

(e) **SHIFT OVER SHEETS!** Given when wind is aft. Stand by to haul all sheets aft on other side. Smother foresail into foremast if it causes annoyance by flapping.

(f) **DOWN MAINSAIL!** Given when wind is slightly on new weather quarter. Set mainsail and haul it flat aft; leave other sheets flying, or smothered into mast, so she will come up rapidly.

(g) **HAUL AFT FORE- AND JIB-SHEETS!** Given as she comes by the wind on new tack. Haul both sheets flat aft.

NOTE.—If wearing in a light to gentle breeze, it is unnecessary to brail up the mainsail, but in a moderate breeze, or anything stronger, it should always be done on account of danger from gybing under those circumstances.

With a sloop-rig, put helm up, and ease off sheets. When wind is nearly aft, trim in main-boom, to avoid danger from gybing violently. In anything stronger than a gentle breeze, sloop-rigged boats should always be tacked to avoid this danger. If absolutely necessary to gybe a sloop in a fresh breeze, the peak should be dropped in addition to hauling in main-boom.

(4) **To brail up.**

(a) **STAND BY TO BRAIL UP!**...Designated thwartmen man the
brails, men tending sheets
stand by to slack them off.
Bowmen stand by to lower away
jib.

(b) **BRAIL UP!**The clews of foresail and main-
sail are hauled up, keeping
fast the topmast halliards.
The jib-halliards are slacked off
and head of jib hauled down
in the fore-sheets, keeping
jib entirely inside the rail.

NOTE.—To make sail from this position, see Art. 59, (1, e).

(5) **To heave to.**

(a) **STAND BY TO HEAVE TO!**..Given as a warning for the crew
to prepare for the evolution.
Coxswain brings boat by the
wind and keeps helm down.

(b) **HAUL MAIN-BOOM AMID-
SHIPS! HAUL AFT
WEATHER JIB-SHEET!
UP FORESAIL!**

These commands are given sim-
ultaneously, and are obeyed
by the men at the various
stations.

In heavy weather the foresail
is brailed up, keeping fast
fore-topmast halliards.

In light breezes the fore-sheet
may be simply slacked off.

If bow falls off, slack away jib-
sheet.

The boat in this condition should
lay dead in the water, wind
about abeam.

(6) **To get under way from
"Heave To."**

MAKE SAIL!Haul aft fore- and jib-sheets,
ease the helm and ease off
the main-boom.

(7) **To reef sail.**

(a) **STAND BY TO REEF!**.....Given as a warning for the crew
to prepare for the evolution.
Tend all halliards. Pass reef-

points through eyelet-holes,
if not already rove off.

Coxswain brings boat by the
wind.

(b) SLACK DOWN THE
HALLIARDS!

Coxswain luffs slightly, but not
enough to cause boat to
lose headway.

Topmast and jib-halliards are
slacked down about eighteen
inches.

(c) REEF SAIL!

Secure reef-earings to tack
of sails. Pass reef-points
around foot of sail. Earing
in leech should be tightly
bound around foot of sail,
not around the boom. The
bowmen report *all ready
forward!* When ready com-
mand:

(d) HOIST AWAY!

Men at halliards hoist sails, and
coxswain lays the boat on
desired course. Always keep
boat under control, if pos-
sible, while reefing. Reef
whenever boat begins to take
in water over lee rail.
Never be afraid of reefing
too soon.

(8) To dowse sail.

(a) STAND BY TO SHORTEN
SAIL!

Given as a warning for crew
to stand by their stations.
Tend topmast-halliards, man
brails, bowmen stand by jib-
tack and get it ready for
slipping quickly.

(b) SHORTEN SAIL!

Lower topmasts, brail up fore
and mainsails. Ease off jib-
tack, keeping halliards fast.
Smother jib into foremast.
Men sit in their thwarts awaiting
next command.

(c) FURL SAILS!

Bowman and 2d-bowman, stroke
and 2d-stroke bundle all gear
into sails, roll them up neatly
around mast, making smooth

skin. Pass sheets around sails, binding them to masts.

(d) PREPARE TO UNSTEP! Cast off shrouds. Bow- and stroke-oarsmen take a shroud in each hand, and, by repeated crossing from one side to another, frap each sail securely into its mast. Bind the shrouds together near foot of mast and tuck in all ends. Bow- and stroke-oarsmen report when all is ready for unstepping.

(e) STAND BY! UNSTEP! Make a slight pause between these commands.

The bow- and stroke-oarsmen seize their respective masts and lift them vertically (inclining mast in direction it is to be lowered) until heel is clear of hole in thwart, then lower them, foremast on port side, mainmast on starboard side.

Men amidships stand on bottom-boards, and help receive and stow masts. After masts are unstepped, launch the mainmast bodily aft, foremast bodily forward. Men quickly take seats on thwarts.

Care will be observed to keep masts from going by the board or going down with a run, but even in this case, it should be possible for men in the waist to receive them without injury to themselves.

A well-drilled crew should easily be able to go from oars to sails, or vice versa, in one minute.

Except with a considerably reduced crew, or in a heavy seaway, masts will never be stepped or unstepped singly. It is not seamanlike and encourages laxity at drill.

Notes.

60. (1) It will be observed that a distinction is made between **SHORTEN SAIL!** and **BRAIL UP!** **SHORTEN SAIL!** always requires topmasts to be lowered, while **BRAIL UP!** requires that they be kept fast.

(2) A similar distinction should be made between **IN MAIN-SAIL!** and **UP MAINSAIL!** (or **FORESAIL!**). **IN MAINSAIL!** requiring topmasts to be lowered; **UP MAINSAIL!** requires topmasts to be kept fast and the sail brailed up.

(3) **SHORTEN SAIL!** and **BRAIL UP!** apply to both masts, working simultaneously. **IN MAINSAIL!** (or **IN FORESAIL!**) are the commands used to take in either sail singly.

(4) The commands herein laid down apply to the sliding-gunter rig. The principles of all boat sailing are the same, and if a different rig is employed this drill will be adapted as well as the circumstances permit.

(5) In general it will be noted that the stroke-oarsmen handle the main, assisted by the 2d-stroke. The bow-oarsmen handle the fore (assisted by 2d-bowmen) until jib is cast adrift. They then devote their attention to the jib, leaving the work around foremast to the 2d-bowmen. Stroke-oarsmen handle main-sheets; 2d-stroke handles the main-brails and halliards and attends fore-sheets. In general, the men on thwarts nearest the cleats attend the sheets, regardless of the sail to which it belongs. The starboard bow-oarsman is in general charge forward and the starboard stroke in general charge of the main, and these men will make necessary reports to the officer or petty-officer in charge of the boat.

(6) The use of the lee oars is dangerous when under sail. A slight gust of wind lowers the gunwale so as to prevent the oars being lifted from the water, thus "catching a crab" and the headway of the boat will cause the oars to fly violently fore-and-aft.

(7) The boat-officer or coxswain will never permit anyone to climb the mast of a boat. If halliards, brails, etc., are unrove, unstep the mast.

(8) Coming alongside under sail requires care, judgment, and experience. In the first place, it should not be attempted if a boat, or other obstruction which the masts could touch, overhangs the gangway, nor in rough weather when the rolling motion of the boat would cause the masts to strike the gangway-platform. In such cases masts should be unstepped and the boat brought alongside under oars.

(9) If the ship is riding to a windward tide, approach the gangway from abaft the beam, tend all gear and shorten sail when boat has sufficient way to reach gangway. The bow- and stroke-oarsmen tend boat-hooks, the other men performing their duties in shortening sail.

(10) If the ship is riding to the wind, approach the gangway from about abeam, tend all gear, bow- and stroke-oarsmen stand by with boat-hooks, when there is sufficient way to make the gangway, command: **IN JIB AND FORESAIL!** The jib-tack and sheet are let go, jib smothered into foremast, lower the fore-topmast and brail it up, at the same time put helm hard down, haul main-boom amidships, or a bit on the weather quarter. This throws the boat's head into the wind, and hauling main-boom to windward deadens her headway, when desirable. When alongside command: **IN MAINSAIL!** stow sails and unstep, if desirable.

(11) The above is the surest and safest method, but with skillful handling all sails may be taken in together, helm put hard down, and boat rounded up to gangway. This requires more skill and judgment and should not ordinarily be attempted.

(12) If there is any current, make allowance for it by heading for a point further forward or aft, as the case may be.

NOTES ON HANDLING BOATS UNDER SAIL.

NOTE.—The following general notes on handling boats under sail are taken from the Petty-Officer's Drill-Book, 1902, in which they were reproduced by permission from Knight's Modern Seamanship:

61. Trim.—(1) To do her best under sail, a boat must be trimmed in accordance with her build and rig.

(2) If she carries considerable head-sail, she will need to be deeper forward than would otherwise be desirable. If she has little or no head-sail, she should trim by the stern. The build and rig are fixed upon with reference to each other, due consideration being given to the purpose for which the boat is designed. Once fixed, the characteristics are practically permanent. The trim of both boat and sails, on the other hand, can be varied within rather wide limits; but they, too, must be considered with reference to each other. Most boats when on the wind sail best when carrying a little weather helm; that is to say, when they have a slight tendency to come into the wind. Too much weather helm may be corrected by shifting weights aft; too much lee helm, by shifting them forward.

(3) **The weights** should be kept out of the ends of the boat, without being unduly crowded together amidships. It is especially important to keep heavy weights out of the bow. The only ballast, as such, that should be carried, is water in breakers. Under no circumstances should "sinking" ballast be allowed; ballast, in other words, which is heavier than water. The lower the weights can be stowed, the better; but care should be taken to keep the "well" clear for bailing. Ballast and cargo must be secured against the possibility of shifting. The crew should be kept well down, and nobody be allowed to stand on the thwarts or to sit on the gunwale. If the men are sitting to windward in a fresh breeze, they should move amidships when passing under

the lee of a vessel or other object, where the wind may fail or even shift in an eddy. The mast should be properly stayed up and down or with a slight rake aft, and the halliards taut up.

62. In a lug-rig, the halliards act as a weather shroud, the tie being led down to windward and abaft, and set up by a two-fold purchase. In most other rigs, shrouds are fitted.

63. (1) On the wind, as has been said, a boat should carry a little weather-helm. The sails should be kept rap full, sheets not too flat, but everything drawing and the boat alive. It is a common mistake to get the sheets so flat that the boat, while pointing high, actually makes a course to leeward of that which she would make if kept away a little with sheets eased accordingly; and it is of course clear that if kept away, her speed will be greater than when jammed up into the wind, in the hope of stealing a fraction of a point. A boat of good draft with a deep keel, or centerboard, and yachts designed for racing, with fin-keels hanging ten feet below their normal draft, will lie amazingly close to the wind with little or no leeway. Ship's boats, however, are not constructed on yachting lines and cannot be held up in the same way.

(2) Sheets may be hauled flatter in smooth water than in rough, and the sheets of standing-lugs, gaff- and boom-sails, sliding-gunters and the like, may be hauled flatter than those of dipping-lugs. The sails being properly set, the leech-cloths of the sails are kept just trembling, with enough weather-helm to let the helmsman "feel" that she wants to come into the wind. As the wind will vary more or less (in apparent, if not real, direction), it is necessary to be watchful and to bring her up or keep her away, from time to time, in order that she may be always at her best. The sails should be kept fuller in rough than in smooth water, and it is more important that the boat should be kept going so as to be always under command of the helm. If a heavy breaking sea is seen bearing down upon her, she should be luffed up to meet it, and kept away again as soon as it has passed. If she loses way she becomes helpless at once. It is dangerous to be caught by a heavy sea on the beam; and if the course to be made in rough water would bring the boat into the trough of the sea, the best plan is to run off for a time with the sea on the quarter, then bring her up with it on the bow, and so make good the course desired without actually steering it at any time.

64. (1) It is a universal rule in boat-sailing that the sheets should never be belayed in any weather.

(2) For a moderate squall, the boat should be luffed sufficiently to shake, without spilling, the sails, thus keeping headway enough to retain control, but with the sheets (as always) in hand. If it comes stronger, she must be luffed more decidedly and the sheet slacked more or less. The sheet may, of course, be let go, and in a sudden emergency this must be done at once, in addition

to putting down the helm, and, if necessary, reducing sail; but the longer she can be kept under control the better, and to let go the sheet is to give up control.

(3) The situation is quite different in running free. Here the sail cannot be spilled by a touch of the helm, and the only prudent thing is to slack the sheet while luffing. The force of the wind would be much reduced by running off, but the trouble with this is that if it comes too strong there is no resource but to lower the sail, and the chances are that it will bind against the shrouds and refuse to come down. Moreover, there is always danger that the wind will shift in a squall, and the mainsail may gybe with dangerous force.

Reefing.

65. (1) When a boat begins to take water, it is time to reef. And she should never, even in smooth water, be allowed to heel too much. A boat that is decked over may run her lee rail awash; but when an open boat is approaching this point it must be remembered that a fresher puff may bear the gunwale lower without warning, and that the moment it dips the boat will almost certainly fill and capsize. The details of reefing will depend upon the rig, but a few general rules may be laid down. The men should be stationed before beginning, and should all be required to remain seated. One hand lowers the halliards as much as may be necessary, another hauls down on the leech and shifts the tack. The sheet is hauled in a little to let the men detailed for the reef-points get hold of and gather in the foot. The sheet is then slacked and shifted, the reef-points passed, the halliards manned, the sail hoisted and the sheet trimmed. It is important to keep the boat under command while reefing, and for this she must have way enough to obey her helm. If she can be luffed a little and still be kept going through the water sufficiently to obey her helm, then it is unquestionably wise to luff, but not sufficiently to risk losing control by the helm.

(2) If the boat has more than one sail, it is a safe plan to reef them one at a time, when the sea is dangerously heavy. If there is sufficient crew in the boat, and the sea is moderate, the seaman-like method is, however, to reef all sails simultaneously, as is the habitual practice on drill.

Running before the Wind.

66. (1) This is the most dangerous point of sailing in a fresh breeze, because of the chance of gybing. The danger increases if the boat yaws, as she will have a tendency to do if trimmed at all by the head; from which follows the rule: in running keep the weights fairly well aft, though never at the extreme after end. Very careful steering is required, and if the sea is really heavy,

the chances are that the boom will gybe in spite of all the care that can be taken, unless lashed to the rail or to a shroud by a "lazy guy."

(2) Squalls are not so dangerous before the wind as when closehauled, unless they are accompanied by a shift of wind. If they call for any reduction of sail, it may be made by dropping the peak of a mainsail (if a gaff-sail), or, more satisfactorily, by reefing.

(3) In running before the wind the foresail is sometimes set on the side opposite the mainsail, a temporary boom being rigged by using a boat-hook or an oar. A boat sailing in this way is going "wing and wing."

(4) If the sea is rough, it is well to avoid running with the wind dead aft. To make good a course directly to leeward, the wind may be brought first on one quarter and then on the other, the mainsail being clewed up, or the peak dropped, each time the course is changed, if the breeze is strong enough to make gybing dangerous.

(5) A serious danger in running before a heavy sea is that of "broaching-to." The boat will yaw considerably, the rudder will be often out of water when it is most needed to *meet her*, and the sails will be becalmed in the trough of the sea. The situation here is much like that of a boat running in a surf; and, as in that case, the yawing will be reduced by keeping the weights aft and by steering with an oar. The jib should always be set, with the sheet hauled aft. It helps to meet and pay her off if she "flies to" against the helm. A drag towed over the stern is also helpful.

(6) Another danger in running is that the boom may dip in the water as she rolls, and thus capsize the boat.

Tacking.

67. (1) In tacking, the same principles apply to a boat as to a ship. After-sail tends to bring her head to wind, head-sail to keep her off; but all sails, so long as they draw, give her headway and so add to the steering-power of the helm.

(2) It is clear that a short, full boat will turn to windward better than a long, narrow one, and will require a much shorter distance for coming around. Thus a short boat is preferable to a long one for working up a narrow channel.

(3) Under ideal conditions, a boat closehauled, but with good way on, shoots up into the wind as the helm is eased down, makes a good reach to windward, and fills away on the new tack without for a moment losing headway. The main-boom is hauled amidships, and, as the jib and foresail lift, their sheets are let go. The boat comes head to wind, and as she pays off on the new tack the sheets are hauled aft and she is steadied on her course. Under less favorable conditions, tacking is not so simple. If there is a sea on the bow, advantage must be taken of a smooth

time to ease the helm down; the main-boom must be hauled amidships gradually, and the foresail kept full as long as it will draw. If the boat loses headway, the jib-sheet is held out on the old lee bow (not too far) to pay her head around, and care must be taken not to make a "back sail" of the mainsail. As she gathers sternboard the helm is shifted, and, if necessary, an oar is gotten out to help her around. Carrying the weights forward is favorable for tacking, but when a boat has sternboard she may be helped around by putting a few of the crew on the (new) lee quarter, where, by increasing the immersion of the full lines of the counter, they add to the resistance and cause the bow to fall off.

(4) If she gets "in irons," either an oar must be used or the jib and foresail sheets must be hauled over on the old tack, flat aback, to give her sternboard. This last is a dangerous maneuver in a strong breeze and rough sea. The use of an oar at any time with a boat under sail is to be discouraged as being lubberly.

Wearing.

68. (1) In wearing, the helm is put up and the main-sheet slacked away roundly. The boat goes off before the wind, the mainsail is either gybed, or brailed up and shifted over (preferably the latter), and the boat is hauled up on the new tack, losing more or less ground to leeward, according to circumstances. The details of the maneuver may vary considerably according to the conditions of wind and sea and the peculiarities of the boat as to rig and trim. In a light breeze, the main-sheet is slacked away roundly until the wind is aft, then hauled in smartly for gybing and eased away steadily on the new lee quarter. In a fresh breeze, where gybing would be dangerous, the mainsail is brailed up just before the wind comes aft, and set again in time to bring her to the wind on the new tack.

(2) The fore- and jib-sheets are shifted when nearly before the wind. As she comes to on the new tack, they are left flowing until hauled aft to *meet her* by the wind.

Gybing.

69. (1) A sail is "gybed" when it is allowed to swing from one side to the other, the wind being aft or nearly so, and the sail full, first on one side and then on the other. This may be done intentionally, as in wearing or in changing course, or it may come unexpectedly from a shift of wind or from the yawing of the boat. As it necessarily involves a violent swing of the sail, it puts a heavy strain upon the spars and fittings and causes the boat to lurch more or less deeply to leeward. Moreover, the violent sweep of the boom across the stern endangers everybody in its path.

(2) In a light breeze, these dangers are perhaps not serious enough to justify the rule that a mainsail should never be gybed, but in a fresh breeze it should not be thought of; and the fact that it is often done by experienced boatmen does not make it any more seamanlike.

(3) When a necessary change of course in a fresh breeze will bring a shift of wind from one quarter to the other, the sail should be lowered or clewed up for a moment before putting up the helm, and then set again on the other quarter. If this cannot be done and it is still necessary to gybe, the peak should be dropped, the boom hauled in slowly and eased away on the new tack.

STEAMERS.

Special Duties of Coxswains.

70. (1) The coxswain of a steamer is responsible for the whole boat, and for the discipline and obedience to regulations of all men in the boat.

(2) While the engineer and fireman, so far as relate to their technical duties, remain responsible to the senior engineer-officer for the proper performance of these duties, they are nevertheless, in general matters, entirely under the orders of the coxswain.

(3) The engineer of the steamer, in technical matters, has general charge of the boiler and engine, and is responsible that the fireman efficiently performs his duties, as he is simply the assistant of the engineer.

(4) If anything is required about the engines, such as coal or water, or if any repairs are required which necessitate temporarily disabling the boat, the engineer will report it to the coxswain, who will report to the officer-of-the-deck.

(5) In overhauling the boat, while in the cradles, the same rule prevails; while the engineer will attend to the technical details of the work on boilers or engines, any outside assistance necessary, not technical in nature, should be obtained by the coxswain; if necessary, by applying to the officer-of-the-deck.

(6) Orders relating to getting up steam are given to the coxswain of the boat, who will inform the engineer. The coxswain is responsible that all reasonable efforts have been made to have steam up at the moment ordered.

(7) The coxswain of a steamer should, as soon as possible after being assigned to that duty, make a special study of his boat, with a view to getting perfectly familiar with her. He should learn by practice the turning-circle, the effect of the screw under different conditions. Also the amount of coal, water, and oil usually carried, the maximum speed of the boat, the steaming-radius, and the amount of extra coal, water, and oil required to cover a given distance at the ordinary speed.

(8) The general instructions for coxswains of boats apply, with equal force, to the coxswain of a steamer, but he is particularly warned, owing to the greater power of his boat, and the greater injury in case of a collision, carefully to study the "Rules of the Road."

(9) In running in a fog, the coxswain should remember that, owing to the presence of the boiler and engine in the boat, the compass will be affected; therefore, to get a correct compass-course, it must not be taken from a chart, but should be observed by reading the compass *when it is in its place for steering by it, and with the launch headed in the desired direction.* This gives the true reading of the compass when the launch is headed on the desired course. Therefore, on his very first trip in and out from a landing the coxswain should always use his compass, observe and, if necessary, record the compass-course, so that he could make the trip, either way, in a fog.

(10) Knowledge of the effect of the screw on the steering is most essential to a coxswain. Generally speaking, the right-handed screw when going ahead tends to throw the stern to starboard; when backing, to port. In other words, the stern is dragged around in the direction the propeller is turning, and this effect is noted whether the boat itself has begun to answer the motion of the propeller or not. In attempting to turn a steamer, the rudder should be shifted when the propeller is shifted, instead of waiting for the boat to lose its headway, for the rudder has the same general effect on the steering of the boat when the propeller is backing, for example, whether the boat itself is moving astern, or has not yet lost her headway and is still forging ahead. This rule is not strictly applicable to all boats, but it is a good general rule.

Notes on Steamers.

71. (1) In making a landing, it is a common mistake to keep too much headway on, and to rely on backing the engines full speed to stop the boat. This is poor seamanship, as the engines may fail to back promptly, causing a collision or smash up, and if they do back hard, it throws unnecessary strain on them. Therefore, make landings with slow speed on the steamer.

(2) In landing alongside a ship's gangway in a strong current, do not let the tide catch your boat on the outboard bow, as this might sweep her underneath the gangway. The boat-line from forward should in all cases be used, the steamer being kept off a little from the side until it is fast, and then sheered in by the helm. A steamer or other boat may lie alongside safely in a strong current with a line from the inner bow, and the helm slightly over towards the ship.

(3) In towing with a steamer, the stern of the boat should be kept well down by shifting weights aft if necessary. This keeps

the propeller well immersed, and gives it a good hold on the water.

(4) When running in a seaway, speed should be reduced somewhat not only to avoid shipping seas, but to reduce the strain on the machinery due to the racing of the screw. In running into a sea, it is possible by careful nursing to make fair speed, watching the seas and slowing, or even stopping for a moment, as heavy ones are seen bearing down upon the boat. If the man who is running the engine has sufficient experience to regulate the speed in this way, it is convenient to leave this to him, if he can see ahead. If running more or less across the sea, it is well to haul up momentarily for a heavy wave.

(5) The water used in the boiler should always be obtained from the ship, as this is always distilled. Fresh water from shore often contains corrosive ingredients, or lime salts, and should never be used when it can be avoided. Salt water should never be used, and the water in the feed-tank should be frequently tasted and never allowed to grow brackish through leaky connections.

(6) When the steamer is about to be lowered, the fires should be started promptly, and steam got ready to try the engine by the time the boat is in the water. As soon as the steamer is in the water, if not before, the feed-pump or pumps must be worked by steam, and the engines turned back and forth, and the whistle, safety-valve, bell, and steering-gear tried. Failures to work must be immediately remedied.

(7) When the steamer is alongside a gangway, never permit any firing. Attention to the fires before coming alongside will prevent the necessity of doing this, and the dirt, and the inconvenience of having thick black smoke over the ship, is avoided. For the same reason, the use of the steam jet is to be avoided when alongside.

(8) Steamer crews are generally inclined to carry too little water in the boiler; a third to half a glass should be the rule.

(9) In water-tube boilers the fires may be forced, or suddenly hauled, or put out with a bucket of water, without danger of seriously injuring the boiler, but this should only be done when there is more or less of an emergency.

ARMED-BOAT EXPEDITIONS.

GENERAL REMARKS.

72. (1) There shall be no separate organizations or routine drills for "Distant-Service" or "Cutting-Out" expeditions of armed detachments in boats. The landing-force organization shall be utilized in all cases where an armed force is needed. Certain sections of a ship's landing-force—infantry or artillery or

both—with the arms, provisions, boat-equipment, etc., *that may be required by the special circumstances of the service*, shall be designated for the work in any case.

(2) One or more squads of a section may be retained on board ship, if their presence is not necessary for the service for which the boat is being equipped.

(3) The necessary number of men shall be selected from the regular special details of the landing-force—pioneers, messmen, signalmen, ambulance- and ammunition-parties—to accompany the expedition; these men may be distributed in the boats with the main body, or they may be assigned to separate boats as occasion requires.

(4) It would be quite impossible to anticipate and provide for every emergency of service in boats. Each case must necessarily be handled as a separate problem, and the regulations for the organization, equipment, and instruction of the landing-force and its various units, if carefully observed, can be made to supply the force—officers, men, and staff—that may be required in any case.

(5) When great haste is necessary, *the combatant part of the expedition, or a portion of it, shall be embarked at once*, with arms and ammunition, emergency-rations for two days, stowed in haversacks, canteens and regular boat-breakers filled, the boat-box and the boat-equipment enumerated in Art. 13. Reserve ammunition, extra provisions, and special equipment shall follow in separate boats. The “firing line,” so to speak, shall never be delayed, in an emergency, until extra provisions, water-breakers, and other articles are hoisted from holds and storerooms. The fighting force must not be hampered, and the material and supplies for its maintenance shall be supplied and forwarded *without undue haste or confusion, but with all care and with every attention to detail*.

(6) Communications between the expedition and the ship, by signal or otherwise, shall be provided for, in order that reserves of men and material may be supplied and forwarded, if necessary.

73. The following are some of the duties that might be required of armed-boat expeditions:

(1) To keep open navigation.

(2) To capture an enemy's crew while in the act of abandoning its ship.

(3) To go alongside, board and capture an enemy's ship, or to capture an unarmed ship or one being built or fitted out.

(4) Boarding duty in blockade.

(5) The entire landing-force of the ship, or a part of it, may land (a) when opposed, (b) when opposition is improbable, (c) on military duty for the protection of persons or property.

74. (1) It is evident that armed boats have so many possible uses that their complete enumeration would be difficult, and *to provide efficiently for all such cases by routine drills would be impracticable*.

(2) The final test in fitting out an expedition in any particular case would be: "Are the boats and the crews properly equipped and prepared for the service to be performed?"

SPECIAL INSTRUCTION FOR ARMED BOAT-CREWS.

75. Units of the landing-force, when embarked in their boats, should be exercised at:

(1) *Rowing with muffled oars*.—In this exercise especial care will be observed to require the boat-crews to pull a dry oar, with the minimum noise practicable, as this precaution would be used in "cutting out" a vessel by going alongside and boarding her unexpectedly.

(2) *Target practice*.—This would include both target practice of the crew with rifles, fired from the boat, and target practice with boat-guns, both of which are fully described in Instructions for Small-Arm Target Practice.

Landing.

76. (1) The method of landing an armed force is fully described in the Landing-Force and Small-Arm Instructions, U. S. Navy.

(2) Boats equipped and manned for landing, especially those carrying guns to be used on shore, should occasionally be exercised at embarking and disembarking on a beach, supposing the landing to be made under fire.

Boat-Crews.

77. It is important that the running boat-crew in any case should be taken from the section of the landing-force assigned to that boat, and that this section should be comprised in the abandon-ship crew of the same boat.

ABANDON-SHIP.

78. On signal for abandon-ship, each man proceeds with the least possible delay to provide his assigned portion of the boat-equipment, and boats are lowered, equipped, manned, reported, and shoved off. For drill, men absolutely necessary in the engineer department will remain below, but a list of the names of such men will be submitted by the senior engineer-officer to the executive-officer. When actually abandoning ship, the furnace doors will be opened, fires hauled, and bleeders opened before the fire- and engine-room force leave their stations.

79. Property.—(1) Every reasonable effort will be made to save the log-book, muster-roll, accounts of officers and crew, cypher-code and other valuable papers. In case of fire or ship-

wreck, it will be the special duty of the pay-officer to secure and preserve the accounts of officers and men, all public money, and such other public papers and property, in the order of their value, as circumstances permit.

(2) If it is impossible to carry signal-books and other confidential papers, they should be burned, or otherwise destroyed, in the presence of an officer.

80. Equipment.—Every boat used for abandoning ship should have the following equipment:

(1) The complete boat-equipment required to be kept in boats at all times, including a boat-compass and tarpaulin.

(2) **Rations for three days**, or as much more as the boat will carry safely. One ration for this purpose is: 1 lb. bread, $\frac{3}{4}$ lb. meat, and $\frac{1}{2}$ gal. water. When actually abandoning ship, if time permits and if landing is probable, a small quantity of salt, pepper, coffee, and sugar may be provided for use on shore; but this will not be required at ordinary drill.

(3) At least two rifles and a supply of ammunition.

(4) Mess-gear and iron kettle.

(5) If possible, a sextant, nautical-almanac, Bowditch's-tables, chart, paper, and pencil. At least one boat, preferably that of the senior officer, must be so equipped.

81. At least two officers should go in every boat, if practicable, and carry service belt, revolver, ammunition, and binoculars, if supplied.

82. Steamers.—(1) In the case of steamers, all preparations must be made for hoisting out boilers before leaving the ship; but circumstances will determine whether or not they shall be hoisted out. If abandoning ship at sea, or in very rough weather, the boiler should be lifted out; but in smooth water, near land, the engine could be used to great advantage. Similarly, if abandoning ship in great haste, time might not permit the boiler to be hoisted out. In all cases, therefore, circumstances must govern.

(2) Men will be stationed to provide wrenches, pinch-bars, etc., for removing boiler, and the necessary purchases to lift it out.

(3) Masts, spars, and sails will always be provided. If the boiler is removed, the sail will be bent and mast stepped. If the boiler is to remain in the boat, coal and water must be provided and the mast and sails will be carried, but the sails need not be bent. In this latter case tools will be carried in the steamer so that in case of emergency the boiler and engine may be dismembered and thrown overboard.

83. Secure.—When SECURE! is sounded, boat-crews will secure their boats, open watertight doors, return supplies, and fall in abreast places assigned for equipping. The boat-officers will report when all is secure.

84. Notes.—(1) The boat-officer should see that all men sta-

tioned in his boat at this evolution are present, and that they understand their duties. If a man is unavoidably absent, he should be notified, after the drill, of his station and duties.

(2) Boats (except dinghies) should have not less than 12 inches freeboard when fully manned and equipped. If, after equipping, any boat is found to have less than this amount of freeboard, a portion of the crew should be permanently transferred by the executive-officer to some other boat. Ten inches is a fair freeboard for the dinghy class.

(3) Junior boats, which will usually not be able to obtain sextants, nautical-almanacs, etc., will keep near senior boats which are so equipped, after they abandon ship.

(4) The particular stations of each man in a boat at abandon-ship will be determined by the boat-officer, and the men will be carefully drilled to take their stations quickly, quietly, and without crowding or confusion. The position of each article of equipment must also be carefully specified and men stationed to stow articles must be thoroughly instructed with regard to the stowage-plan, according to a sketch of the boat clearly defining the position of water-breakers, boat-box, bread, meat, etc., otherwise there will always be confusion of the personnel and slovenly stowage of the equipment.

(5) It is important that the abandon-ship crew of each boat should comprise the detail of the landing-force assigned to that boat, increased by such additional men as may be necessary.

PART V

GENERAL INSTRUCTIONS CONCERN- ING SERVICE IN SHIP'S BOATS.

DUTIES OF A BOAT-OFFICER.

NOTE.—Owing to the fact that many boats do not have a boat-officer, the general instructions for handling boats were written to cover the cases where a coxswain has charge. Boat-officers will also be governed by these instructions, in so far as they are applicable. The instructions under Article 85 apply particularly to boat-officers—who are assumed not to be of commissioned rank.

85. (1) When ordered to take charge of a boat, the boat-officer will report promptly to the officer of the deck, dressed in the uniform of the day and with appropriate side-arms.

(2) Sees boat lowered and manned, or manned at the boom and dropped down to the gangway. If boat was lowered for this duty, he sees boat-falls hauled taut.

(3) Sees all required equipment is in boat, and that boat-gear is in good order.

(4) Sees crew in place and in proper uniform, oars up-and-down, blades trimmed fore-and-aft, coxswain at his station.

(5) Reports to officer-of-the-deck that boat is alongside, manned, and ready for duty. Receives orders and makes sure that he understands them perfectly before leaving ship.

(6) The boat-officer will at all times require that the crew preserve silence and pull a strong, regular stroke, that all rules concerning the handling and management of boats, whether under sails or oars, are carried out, that all boat-salutes are promptly made or returned, and that prescribed rules for boat-etiquette are strictly observed.

(7) In going alongside a man-of-war, use the port side, except when there are commissioned officers or their guests in the boat, or when the starboard ladder only is shipped. In all cases, however, the lee gangway should be used in heavy weather. Salute the colors, if hoisted, on stepping over the gangway, and report to the officer-of-the-deck.

(8) In ordinary weather, as a general rule, as soon as the boat-officer steps out of his boat at the gangway, he should order the coxswain to shove off and lie off the quarter. If, however, he simply has a brief report to make, or message to deliver to the officer-of-the-deck, he may leave his boat at the gangway (provided other boats are not approaching), make his report, ask permission to shove off, and leave immediately.

(9) If there is a strong tideway, or if he expects to be detained on board for some time, he should ask permission for his boat to haul out to the boom; and if the delay is likely to be long enough to make it worth while, he should ask permission for his crew to come on board—a privilege that is usually much appreciated by the men, who thus have an opportunity to see old shipmates, take a smoke, etc.

(10) In this connection, the attention of young officers is invited to the importance of treating their men with all due and proper consideration. If boat-officers thoughtlessly leave their boat-crews lying off the quarter in a tideway, or in excessively hot or cold weather, and otherwise subject them to unnecessary exposure or discomfort, it cannot but react against the interests of discipline and efficiency.

(11) When ready to leave the ship, the boat-officer should request the officer-of-the-deck to have his boat manned, or called alongside, but he should in no case give the orders himself, unless specially invited to do so—as is sometimes done when the officer-of-the-deck is much occupied.

(12) When the boat-officer must absent himself from his boat, as, for example, to call upon a consul, or do other duty on shore, he should give his coxswain positive orders concerning the duties to be performed during his absence.

(13) On his return to the ship the boat-officer will report the completion of his duty to the officer-of-the-deck. If the boat is no longer required, he will see that it shoves off and pulls out to the boom; or if it is to be hoisted, he will see the necessary preparations made and report when the boat is ready, unless the officer-of-the-deck excuses him from this duty.

(14) A boat-officer has general charge of the boat, but when carrying commissioned officers, the senior line-officer has authority to give directions, and if need be to take command; since by Navy Regulations the senior line-officer in a boat is responsible for its management and safety under all circumstances.

(15) When ordered on boat-duty the boat-officer should remember the men's meal-hours, and, if there is a likelihood of the boat not returning in time, he should ask the officer-of-the-deck to have their meals saved.

(16) **Boarding-duty.**—A frequent duty of a boat-officer is boarding. Every ship keeps a boarding-book, which should always be carried on boarding-duty. In this book is entered the following routine information: Name of vessel, nationality, name of captain (if man-of-war also obtain rank of captain or senior officer of group of ships); where from; kind of passage; special incidents of voyage; men-of-war sighted; probable date of departure, and where bound. Besides this, any other information which might be of value or interest. Frequently information as to date of commission of the senior officer, length of service on

station, etc., is of value in determining the proper interchange of courtesies. In such cases this information should be obtained. The boarding-book may be taken on board a merchant steamer and filled out, but when boarding a foreign man-of-war the boarding-book should be left in the boat out of sight, and the information entered after leaving the ship. Ordinary boarding-calls on foreign men-of-war are usually of a purely courteous nature; therefore, unless the boat-officer has a special message for the captain of the vessel, he should inform the officer-of-the-deck that he was sent to present the compliments of his commanding officer and to offer his services. The officer-of-the-deck of the boarded vessel will then be guided by his own instructions as to whether the boarding-officer shall see the captain or not. If he states that the captain requests to be excused, the boat-officer obtains the information which is desired, and requests permission to leave the ship.

(17) **If doing guard-duty**, or if sent on board the senior ship, a note-book is to be carried to record verbal orders which the boat-officer may receive. This note-book will be carried on board the senior ship and the orders recorded immediately they are received.

(18) **In delivering a message**, always first present the compliments of the officer from whom the message comes, then deliver the message.

DUTIES OF COXSWAIN.

86. (1) **The coxswain of a boat** should be perfectly familiar with everything relating to the care and handling of his boat, and be competent to instruct his crew in all details of general service or drill.

(2) He is responsible to the officer in charge of the boat for its cleanliness and readiness for service, and he should constantly keep himself informed as to the condition and completeness of the boat-equipments, reporting all deficiencies to the boat-officer.

(3) He is responsible for the appearance and behavior of his boat-crew and that they always pull properly and conduct themselves in a seamanlike manner.

(4) Coxswains and boat-crews should remember that they represent their ship, and they should therefore be taught to take a pride in their own appearance and in that of their boats. The efficiency and smartness of a ship's boats and boat-crews generally reflect most clearly the tone of the ship.

(5) The coxswain is to be careful that his boat-crew is always properly dressed, paying particular attention to the following points:

(a) Hats and caps properly worn with ship's name square to the front, and no hair showing on the forehead below the hat or cap.

(b) That the brims of white hats are never turned down.

(c) That grommets are always worn in blue caps, except in windy weather, when he will direct that *all* grommets be removed.

(d) That knife-lanyards are worn under the collars.

(e) That trousers are never turned up, except in bad weather.

(f) That the men of the boat-crew are dressed alike as regards oilskins, but oilskins are not to be worn unless it is actually raining.

(g) That all members of the crew are in uniform in regard to footgear; that is, either that they all wear shoes or all go barefooted.

(h) That in cold weather boat-crews will have their overcoats at hand.

(i) Crews in running-boats (including engineer-crews in steamers) shall be dressed in the uniform of the day.

(6) Owing to the constant use of steamers in port, and their consequent greater liability to become soiled, coxswains must devote particular attention to the neat and ship-shape appearance of their boat and boat-crew.

(7) The coxswain of a steamer is especially responsible that the crew and enlisted passengers sit down in their proper places, that they do not sit on the gunwale, and that the men outside the canopy conduct themselves in a seamanlike and proper manner in extending salutes.

(8) Coxswains of steamers will devote particular attention to the proper handling of the canopy-curtains. When curtains are not required, they will have them *neatly* rolled and stopped up, and when in use they will be neatly stopped down to the washboard. It is not ship-shape to stop down one corner of a side-curtain, but when running into a head-sea the coxswain may frequently find it necessary to lower the curtain forward, while it remains stopped up along the sides. Similarly it is frequently necessary to haul down the curtains on one side and leave them furled on the other. Under all circumstances, when the curtains are in use they must be neatly stopped down, as nothing is more slovenly than canopy-curtains hanging loosely and flapping to the wind.

(9) Coxswains of steamers must see that towels or clothing are never hanging in the boat when she is called away for service.

(10) Coxswains of steamers will require the stern-man to devote particular attention to the appearance of the stern-sheets of the boat. Cushion-covers will be kept neat and clean, the lantern filled, trimmed, polished, and the globe cleaned so that it will give a bright light. The boat-flag, when not in use, is to be kept neatly rolled on its flagstaff and triced up overhead, not hanging loosely from flagstaff, where it presents a slovenly appearance

and interferes with passengers. When the boat is called away for the use of commissioned officers, the stern-man will spread the boat-cloth neatly in the stern-sheets of the boat, and see the foot-cloths, or ladder (if used) on the proper side of the boat.

(11) When boats are called away, coxswains will go in the boat over the boom, will see that the crew is in the boat, that everything is ready, and then drop down to the gangway. The coxswain then reports to the officer-of-the-deck, or the boat-officer, that the boat is at the gangway ready for service, and in the absence of a boat-officer, receives his orders, which he must make sure that he clearly understands. In the absence of a boat-officer, he will come on board to report his boat, if necessary.

(12) On his return to the ship he will report that orders have been complied with. He will also report anything amiss that is visible from outside the ship, such as windsails which require trimming, ports to be squared, anything hanging over the side, or clothes being in improper places. He will see his boat properly hauled out to the boom.

(13) The crew shall not be allowed to leave the boats on shore without proper authority. If necessary for any member to leave the boat temporarily, the coxswain will report the fact to the officer-of-the-deck immediately on his return to the ship.

(14) The coxswain will never permit smoking in his boat during daylight, except when on detached service, surveying-duty, or on hunting or fishing expeditions. This rule forbids smoking in boats which are permitted to go out for pleasure sailing, except when special permission is obtained before leaving the ship; but this should be granted only in unfrequented ports.

(15) When boats are ordered to moor, they are to be reported "moored" by the coxswain to officer-of-the-deck.

CARE AND CLEANING OF BOATS.

87. (1) The coxswain is responsible that his boat and all that belongs to it is kept in good order. When anything is lost or any repairs are required, he is to report the fact to his boat-officer. He is responsible that his boat-davits are clean, and is to report if any gear connected with them is not in good order.

(2) Care is necessary to see that the oars are properly coppered, leathered, and marked, that they are of the correct length, and are assigned to their proper thwarts. Use particular care at all times with the blades of the oars, as they are easily split or broken by rough handling, or by treading on them.

(3) Great care should be observed to maintain an efficient set of oars, having them neither too heavy nor too light. Ensigns, pennants, staves, and trucks demand careful attention. Also trailing-lines, rowlock-lanyards, boat-hooks, and the boat-equipment.

(4) Coxswains are always personally to superintend when their boats are being lowered, hoisted, or moored.

(5) Immediately that a boat is hoisted, the coxswain is to see her squared by the falls, dried out, boat-gear neatly stowed, the outside cleared of all marks, the plug out (except in life-boats at sea), and secured close to the plug hole with a lanyard. When the ship is at sea, life-boats will habitually keep their boat-plugs in.

MISCELLANEOUS INSTRUCTIONS.

88. (1) Ship's boats will always keep a sharp lookout for signals, both from their own and from the senior officer's ship.

(2) Boat-ensigns are not to be used for boats to which they do not belong, and the insignia on the head of the pennant-staff and flagstaff will be as prescribed for the rank of the officer to which it belongs. The insignia on the head of the pennant-staff and flagstaff are identical and are as follows:

- (a) Flag-officers or commanders... Gilt lance-head.
- (b) Captain Gilt ball.
- (c) Commander Gilt star.
- (d) Lower rank Flat truck.

(3) Boat-ensigns are half-masted whenever the vessel to which the boat belongs half-masts her colors. If absent out of sight of the ship, and men-of-war in vicinity have colors half-masted, it is proper to follow their movements.

(4) Except when the ship is full-dressed, the ensign is never to be left flying in boats made fast astern, or at the boom.

(5) A boat under sail is never to fly its ensign at a staff, but the ensign will be flown from the peak, or head of the mainsail.

(6) As a general rule, boats pulling less than four oars are not to fly boat-ensigns.

(7) Boats are not to lie alongside a gangway or landing place, but are to lie off while waiting. In case a long wait is probable, or in bad weather, or on occasions at night, permission may be asked to make fast to the boom, also for the crew to come on board.

(8) Small gear should not be left in boats which remain at the boom after sunset, as otherwise they may be stolen by passing shore-boats.

(9) When fresh provisions are being carried in a boat, they should always be covered with a tarpaulin.

(10) Racing boat-crews are never to land, without special permission from the executive-officer.

(11) If a boat-crew is away until after 11.00 p. m., the men may be allowed to sleep in until 6 bells in the morning. Time is to be taken five minutes after the boat is hoisted or secured for the night.

(12) **Recalls** are to be obeyed as soon as seen.

(13) Steamers will be coaled and watered for the day's service during morning watch, or at a stated time in the day's routine.

(14) When a visiting-party goes alongside, the petty-officer in charge thereof will go on board and obtain permission before allowing any of the visiting-party to leave the boat.

(15) If permission is granted, he allows the party to come on board, each one saluting, if colors are hoisted, as he crosses the gangway. If the boat is to wait, it shoves off and lies off the quarter, as above mentioned, unless the officer-of-the-deck gives permission for it to haul out to boom. The regular crew will remain in the boat unless the officer-of-the-deck grants permission for it to come on board.

(16) A boat shall always haul clear of the shore landings while waiting.

BOATKEEPERS.

89. (1) **Boatkeepers** are detailed by the coxswain of the boat, usually by thwarts in rotation, two men being assigned for one day, in order that they may relieve each other.

(2) Both boatkeepers of a running-boat clean her out during the morning watch. Boats must be in all respects ready for use by 8.00 a. m.

(3) The boatkeeper of the forenoon watch goes into his boat (when at boom) at 8.00 a. m., dressed in the uniform of the day.

(4) One of the boatkeepers is always to be in his boat when she is at the boom, while the ship's colors are hoisted, unless ordered by the officer-of-the-deck to come on board, on account of bad weather. If ordered in on this account, they will remain on deck in sight of their boats, and watch and tend them from that position.

(5) They should be careful that the oars and other gear in their boats are always neatly placed, and that the awning is properly spread. They will wipe out their boats and touch up the bright-work as often as necessary. They will, if necessary, haul their boat up to the boom in order to clear boats coming alongside the gangway.

(6) When not otherwise engaged, boatkeepers will always sit up properly in their boats, and will never lounge or read.

(7) When boat-awnings are not spread they are to stand up and salute all officers who pass their boats, or who come alongside or leave the gangway.

(8) If awnings are spread, they will sit erect and salute.

(9) When more than one boat is at the boom, boatkeepers will salute together.

(10) At morning or evening colors boatkeepers stand facing the

ship's colors and salute as if on deck. If boat-awnings are spread, they will be furled at the *first call* in the evening.

(11) The rules regarding salutes extended by boatkeepers apply to all men in boats at the boom, or riding astern. All men in such boats salute together.

NOTES ON MANAGEMENT AND HANDLING OF BOATS.

90. (1) Boat-crews are always to man their boats over the boom, and all of the crew should be in the boat in about one minute after the pipe or call. The crews of running-boats should remain on deck near lower-boom, waiting for a call. A boat should never require longer than three minutes after being called away before reporting ready to shove off from the gangway.

(2) Boat-crews are to pull a smart, steady stroke at all times. The first part of the stroke is to be pulled with straight back and arms, keeping eyes always in the boat, body to move directly to the front and rear. Always use the back in pulling.

(3) When laying on oars, they must be horizontal with blades feathered and the boat-crew sitting upright with both hands on the handle of the oar. Lounging on the oars must not be permitted.

(4) When oars are tossed, they must be held vertically, with blades in fore-and-aft plane, handles of oars on bottom-boards, the wrist of the inboard hand resting on thigh, outboard hand grasping loom at height of chin, crew sitting upright.

(5) In tossing after the command WAY ENOUGH! oars are tossed to an angle of 45 degrees and then carefully and quietly boated.

(6) The practice of cutting close across the bow or stern of a ship, under lower-booms, or around points of land, is to be avoided.

(7) No one except the coxswain and boat-officer are ever to be permitted to sit abaft the backboard.

(8) When under sail:

(a) Never hesitate to reef in good time.

(b) Always see sails well set and trimmed according to the direction of the wind.

(c) See that sheets are never belayed.

(d) See that crew is properly stationed for making and shortening sail, reefing, and tacking.

(e) Trim the boat by shifting crew or ballast, as required.

(f) Require crew to sit on thwarts. In making sail no one will stand up, except when absolutely necessary, and even then only on bottom-boards of the boat.

(g) Remember that a loaded boat carries more way than an empty one.

(h) In coming alongside, allow plenty of room for rounding to; the mast should be unstepped immediately the sail is

lowered. If for any reason the boat is likely not to come alongside satisfactorily, it is seamanlike to tack or wear and try again.

(9) Boats with full crews will always pull out from gangway to boom. They will never haul out by the grabrope when there are more than three men besides the coxswain in the boat.

(10) Boats on ordinary service will, when the weather is not inclement, use sail in all cases where it will not cause delay in making their trip.

(11) **Boat-lines** should be hove to the bowman whenever a boat comes alongside in a strong tideway, or when a heavy sea is running, in order to assist in holding the boat in place.

ABBREVIATED RULES FOR COXSWAINS.

91. (1) Always:

- (a) See required equipment in boat.
- (b) See key to boat-box in boat before leaving the ship.
- (c) See boat and boat-gear clean and ship-shape.
- (d) See crew in uniform.
- (e) See that oarsmen use oars assigned their thwarts.
- (f) Require crew to maintain silence in boat.
- (g) Rise and salute superior officer when he enters or leaves boat.
- (h) See that enlisted men who are passengers in stern-sheets rise and salute commissioned officers when they enter boat.
- (i) In getting up, tossing, boating oars, etc., see that men handle oars smartly with arm muscles, keeping body as erect as possible.
- (j) Always give commands in a clear, sharp, and distinct voice.
- (k) Give preparatory commands, when they are necessary to prevent taking the crew by surprise.
- (l) Give commands at proper period of stroke—that is, when the blade is in the water near the beginning of the stroke.
- (m) Require crew to pull a strong, regular stroke, using the back.
- (n) Require crew to feather their blades.
- (o) When laying on oars, see that crews sit upright, with hands on oar handles, blades trimmed horizontal.
- (p) Keep boat bows-on to a heavy sea.
- (q) Watch the ship for signals.
- (r) Obey boat-recall as soon as made out.
- (s) See fenders over the side when coming alongside a gangway or landing.
- (t) See sheets tended while under sail, never belayed.
- (u) See sails well set and trimmed.

(v) Reef in time.

(w) See that every duty in a boat is done in a sharp, quick, seamanlike manner.

(x) Correct every infraction of regulations the moment it occurs.

(y) In hoisting the boat, hook the forward fall first.

(z) Report, immediately on return to the ship, any damage to boat or loss of boat-gear or equipment, and circumstances attending same.

(2) **Never:**

(a) Belay a sheet while sailing.

(b) Attempt to gybe a main-boom in a fresh breeze.

(c) Stow away boat-flag when wet; colors will run.

(d) Unhook forward fall first in lowering.

(e) Have after fall hooked when forward one is unhooked.

(f) Carry heavy weights in extreme ends of boat.

(g) Go over a ship's after gangway, to or from a boat, when colors are hoisted, without saluting.

(h) Allow talking in a pulling-boat while under way.

(i) Allow men to leave boat at landing without proper permission.

(j) Lay alongside shore landing longer than is required to land.

(k) Pass a senior boat without permission.

(l) Try to steer in a heavy seaway without a steering-oar.

(m) Try to land through surf, unless expert in doing so, unless absolutely necessary.

(n) Leave boat after it is capsized, until rescued.

(o) Permit the crew to lounge when laying on oars.

(p) Permit any member of the crew to stand on thwarts.

(q) Permit any member of crew to climb a mast. Unstep if necessary.

(r) Permit towels or clothing to be hung up in a duty-boat.

(s) Jamb a helm down too suddenly or too far.

PART VI

BOAT SALUTES AND BOAT ETIQUETTE.

92. Salutes shall be exchanged between boats meeting or passing each other, as indicated in the table on the following page. The junior will always salute first, and the senior will return the salute with the hand.

93. (1) In boats fitted with swivel rowlocks which are so curved as to render tossing impracticable, oars will be trailed in all cases, instead of being tossed. Such boats will always have the oars secured by trailing lines.

(2) In steamers, engines are to be stopped in all cases in which pulling-boats toss, trail, or lay on oars.

(3) In laden boats, towing boats, or boats under sail, make the hand salute only, on all occasions.

(4) Officers not having their distinctive flag or pennant flying will receive the hand salute only, whether they are in uniform or civilian's clothes.

94. (1) Coxswains in charge of boats rise and salute when officers enter or leave their boats, also when their boats are saluting commissioned officers in other boats or returning a salute from them; but when steering a loaded or towing boat, or a boat under sail, they will not rise, but will salute with the hand only.

(2) Enlisted men who are passengers in the stern-sheets of a boat will always rise and salute when a commissioned officer enters or leaves the boat.

(3) Officers in a boat will rise and salute commanding officers or flag-officers when they enter or leave a boat.

(4) Juniors always get into a boat ahead of, and leave it after, their seniors, unless the senior officer in the boat gives orders to the contrary.

(5) As a general rule the seniors take the seats furthest aft; juniors will leave such seats for their seniors.

95. (1) At morning or evening colors, boats passing near a U. S. naval vessel, or when lying off a foreign man-of-war, will salute as follows:

(2) Pulling-boats by lying on oars, and steamers by stopping engines. Coxswains of the boats will stand and salute, and members of a steamer's crew outside of the canopy, will stand facing toward the colors and salute when the flag reaches truck or taffrail.

Rank of the Senior Officer in the boat to be saluted.

Rank or rate of the senior in the saluting boat.	Flag-Officer or Commodore, with the flag flying.	Commanding Officer, with pennant flying.	Commissioned Officer	Midshipman and Warrant Officer.
Flag-Officer or Commodore.	Junior salutes with hand.	Junior salutes with hand.		
Commanding Officer.	Stops engine, or lays on oars, and salutes with hand.			
Staff-Officer with the rank of Captain or Commander.	Stops engine, or lays on oars, and salutes with hand.	When meeting a Senior Commanding Officer, or immediate commanding officer, stops engine, or lays on oars, and salutes with hand.	Junior salutes with hand.	
Marine Officer with rank of Col. or Lt. Col.	Stops engine, or tosses or trails oars, and salutes with hand.		Junior salutes with hand.	
Commissioned Officer.	Stops engine, or tosses or trails oars, and salutes with hand. <i>tosses or</i>	Stops engine, or lays on oars, and salutes with hand.	Junior salutes with hand.	Junior salutes with hand.
Midshipman and Warrant Officer.	Stops engine, or trails oars, and salutes with hand.	Stops engine, or lays on oars, and salutes with hand.	Salutes with hand.	Junior salutes with hand.
Officer and Coxswain in loaded or towing boat, or boat under sail.	Salutes with hand.	Salutes with hand.	Junior salutes with hand.	Junior salutes with hand.
Coxswain.	Stops engine, or tosses or trails oars, stands and salutes with hand.	Stops engine, or lays on oars, stands and salutes with hand.	Stands and salutes with hand.	Salutes with hand.

96. (1) When a steam launch salutes another boat in passing, or when it passes a ship that parades a guard or otherwise salutes an officer in the boat, the members of the crew outside the canopy will stand at attention, facing the boat or vessel.

(2) Similarly, if the steamer is carrying an officer for whom a salute is being fired, men outside the canopy will stand at attention, facing the saluting ship. The engines are stopped at the first gun, and the boat headed up parallel to the saluting ship.

97. (1) **Boatkeepers** and all other men in boats that are not under way or at the boom, and not carrying an officer, will, when boat-awnings are not spread, stand and salute when an officer comes alongside, leaves the side, or passes near them, and will remain standing until the boat passes or reaches the ship's side. If boat-awnings are spread, they will sit at attention, Art. 99, (1), and salute with the hand without rising.

(2) **Men working** on the ship's side do not salute, but continue their work, except when the bugle sounds the call *Attention*.

98. (1) **Salutes** will be extended to foreign military or naval officers, or officers of our own army or marine corps, in the same manner as to U. S. naval officers of corresponding rank. This rule applies alike afloat and ashore.

(2) No junior shall ever pass a senior in a boat going in the same direction without first obtaining permission to do so.

99. (1) **The position of attention** in a boat is sitting erect on thwart or in stern-sheets.

(2) **At landing-places**, officers are saluted by the crew of a pulling-boat sitting at attention, and by the coxswain rising and saluting with the hand.

100. (1) **Coxswains** will never allow the crew to talk while pulling.

(2) Enlisted men who are passengers in running-boats which contain officers will maintain silence.

101. (1) **Boats at landings** will always show deference and respect to boats of other ships of our own or of a foreign service. Coxswains will remember that landings are for the use of all, that they should exercise patience and forbearance in awaiting their turn to go alongside, and when once alongside they should give way for other boats as soon as possible. In such cases boats carrying seniors should be given the opportunity to land first, and officers will be saluted and in every way treated with the deference and respect due their rank.

(2) It should be remembered that boats at a landing come more intimately into contact with officers and men from other ships than at any other place; therefore, a strict observance of all courtesies by a boat-crew will reflect credit upon the ship. If a doubt exists about the rank of an officer in a boat, it is preferable to salute, rather than risk neglecting to salute one who is entitled to that courtesy.

102. To indicate the rank of officers when approaching a ship in a steamer without their distinctive flag or pennant displayed in the bow, the coxswain may sound the following signals with the steam-whistle:

- (1) *4 short blasts* for flag-officers.
- (2) *3 short blasts* for commanding officers or chief of staff.
- (3) *2 short blasts* for other commissioned officers.
- (4) *1 short blast* for all others.

103. When approaching a ship at right, intending to go alongside, the replies given to the "hail" will be in accordance with the rank or official position of the senior officer in the boat, as follows:

- (1) Flag-officer: "Flag."
- (2) Chief of staff, if not in command of the flagship: "Fleet."
- (3) Commanding officer: Name of ship under his command.
- (4) Other commissioned officers: "Aye, Aye."
- (5) Other officers: "No, No."
- (6) Enlisted men and marines: "Hello."
- (7) Boats not intending to go alongside: "Passing."

PART VII

RULES OF THE ROAD

AND

BUOYAGE SYSTEM IN U. S. WATERS.

RULES OF THE ROAD.

NOTE.—The following portions of the “Rules for Preventing Collisions at Sea, and upon Inland Waters of the United States,” apply to boats.

Lights.

104. The rules concerning lights shall be complied with in all weathers from sunset to sunrise.

(1) **Steam-launches** shall carry in the fore part of the boat, or on or in front of the funnel, a bright white light, constructed and fixed as prescribed for the masthead lights of steam vessels, and of such a character as to be visible at a distance of at least two miles; also, green and red side-lights constructed and fixed as prescribed for the side-lights of steam vessels, and of such a character as to be visible at a distance of at least one mile, or a combined lantern showing a green light and a red light from right ahead to two points abaft the beam on their respective sides. Such lanterns shall be carried at least three feet below the white lights.

(2) **Rowing-boats**, whether under oars or sail, shall have ready at hand a lantern showing a white light which shall be temporarily exhibited in time to prevent collision.

(3) For an *anchor-light* an ordinary hand-lantern is to be exhibited when required.

Sound-Signals for Fog.

105. (1) **Steam-launches** shall be provided with a steam-whistle.

(2) In fog, mist, falling snow, or heavy rainstorms, whether by day or night, the steam-whistle shall be used as follows:

(3) A steam-launch under way shall sound, at intervals of not more than one minute, a prolonged blast of from four to six seconds' duration.

(4) A steam-launch under way, but stopped, and having no way upon her, shall sound, at intervals of not more than two minutes, two prolonged blasts, with an interval of about one second between.

Speed in Fog.

106. Boats shall, in a fog, mist, falling snow, or heavy rain-storms, go at a moderate speed.

Steering and Sailing Rules.

107. (1) **When two boats under sail** are approaching one another so as to involve risk of collision, one of them shall keep out of the way of the other, as follows:

(a) A boat which is running free shall keep out of the way of a boat which is closehauled.

(b) A boat which is closehauled on the port tack shall keep out of the way of a boat which is closehauled on the starboard tack.

(c) When both are running free, with the wind on different sides, the boat which has the wind on the port side shall keep out of the way of the other.

(d) When both are running free, with the wind on the same side, the boat which is to windward shall keep out of the way of the boat which is to leeward.

(e) A boat which has the wind aft shall keep out of the way of other boats.

(2) **When two boats under steam or oars** are meeting end-on, or nearly end-on, so as to involve risk of collision, each shall alter her course to starboard so that each may pass on the port side of the other.

(3) When two boats under steam or oars are crossing so as to involve risk of collision, the boat which has the other on her own starboard side shall keep out of the way of the other.

(4) When a boat under steam or oars and a boat under sail are proceeding in such directions as to involve risk of collision, the boat under steam or oars shall keep out of the way of the boat under sail.

(5) Where by any of these rules one of the two boats is to keep out of the way, the other shall keep her course and speed.

(6) Every boat which is directed by these rules to keep out of the way of another boat shall, if the circumstances of the case admit, avoid passing ahead of the other.

(7) Every boat under steam which is directed by these rules to keep out of the way of another boat shall, on approaching her, if necessary, slacken her speed or stop or reverse.

(8) Every boat, whether under steam, oars, or sail, when overtaking any other shall keep out of the way of the overtaken boat.

(9) Any boat under steam approaching another which is in sight of her shall indicate what course she intends to take by the following signals on her whistle:

(a) One short blast to mean "I am directing my course to starboard."

(b) Two short blasts to mean "I am directing my course to port."

(c) Three short blasts to mean "My engines are going at full speed astern."

(d) The words "short blast" to mean a blast of about one second's duration.

(10) In a narrow channel every boat under steam or oars shall, when it is safe and practicable, keep to that side of the fairway or mid-channel which lies on the starboard side of such boat.

(11) Whenever a boat under steam is nearing a short bend or curve in a river or harbor she should give a long blast on the steam-whistle.

(12) Boats under steam when leaving a ship to proceed ahead and cross to the other bow should give the proper signal on the steam-whistles.

(13) Due regard shall be had to all dangers of navigation and collision, and to any special circumstances which may render a departure from the above rules necessary in order to avoid immediate danger.

BUOYS.

Uniform System of Buoyage in United States Waters.

108. (1) In coming from seaward, *red* buoys mark the starboard or *right-hand* side of the channel, and *black* buoys the port or *left-hand* side.

(2) Mid-channel dangers and obstructions are marked by buoys with *black* and *red horizontal* stripes and may be left on either hand.

(3) Buoys indicating the fairway are marked with *black* and *white* vertical stripes and should be passed close to.

(4) Sunken wrecks are marked by the red and black obstruction buoys described in par. 2. In foreign countries green buoys are frequently used to mark sunken wrecks.

(5) Quarantine buoys are yellow.

(6) As white buoys have no special significance, they are frequently used for special purposes not connected with navigation.

(7) The starboard and port buoys are numbered from the seaward end of the channel, the *black* bearing the *odd* and the *red* the *even* numbers.

(8) Perches with balls, cages, etc., will, when placed on buoys, be at turning points, the color and number indicating on which side they shall be passed.

PART VIII

NAVY SIGNALS.*

GENERAL REMARKS.

109. (1) The following books contain all U. S. Navy signals and instructions for their use:

(a) General-Signal Book. This contains general signals, the telegraph dictionary and the geographic codes, and a list of vessels of the U. S. Navy, with their numbers.

(b) The tactical-signal book contains signals and explanations of maneuvers used in fleet tactics; also complete instructions for using all signal-codes, U. S. Navy.

(c) The Boat-Book contains tactical and other signals for use when signalling to boats.

(d) In connection with the signal-code, a *navy list* of officers will be used, consisting of the names in the annual navy register of the latest issue, each one of which bears a number for this purpose.

(2) In addition to the above books describing naval signals, the International-Signal Code contains a system of flag-signals which are used when signalling with vessels not in the U. S. Naval Service.

110. The following methods of signalling may be employed by vessels of the U. S. Navy:

(1) **Flag-signals.**—Each flag indicates a numeral (1 to 0), while the number indicated by the hoist refers to the General-Signal Code, Telegraphic Dictionary, Geographic Dictionary, Boat Code, Vessel's Number, Navy List, Date Table, Compass Table, or Numerals, according to the flag or pennant used with the hoist. Flag signals are for day use only, and can, of course, be used only at distances at which the flags can be distinguished.

(2) **Army and navy (wig-wag) code.**—Made by indicating the letters of the alphabet and numerals by waving a flag, torch, or lantern, or by flashing a lantern, heliograph, or search-light.

(3) **Sound-signals,** employing same alphabet as is used with wig-wag, but letters are indicated by the bell, whistle, or even by gun-shots used in connection with the General-Signal Code.

(4) **Semaphore-signals,** in which the letters of the alphabet or numerals are indicated either by various positions of a man's arms

* NOTE.—This chapter on Navy Signals is inserted for convenience of reference. Such parts of the Signal-Book as are not confidential have been copied, and nothing in this chapter supersedes or modifies the instructions contained therein.

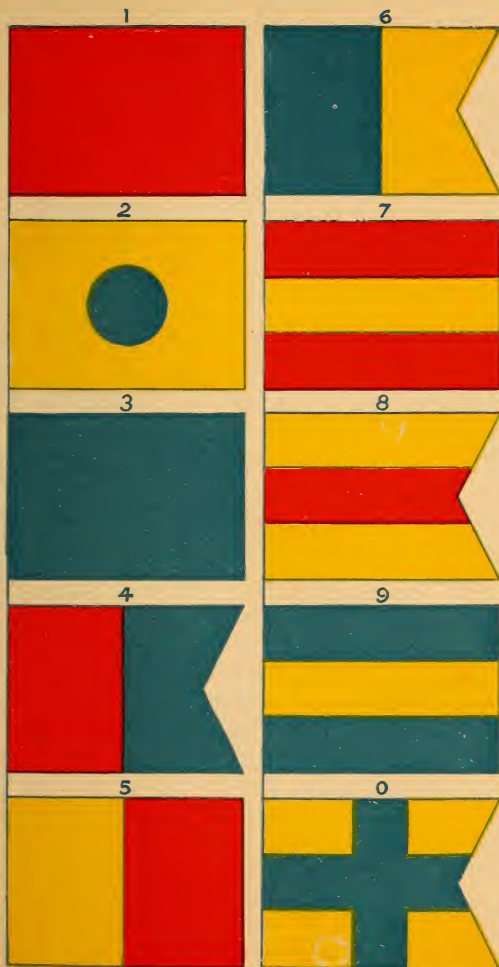


Plate 1. Art. 110, (1). Numerals.

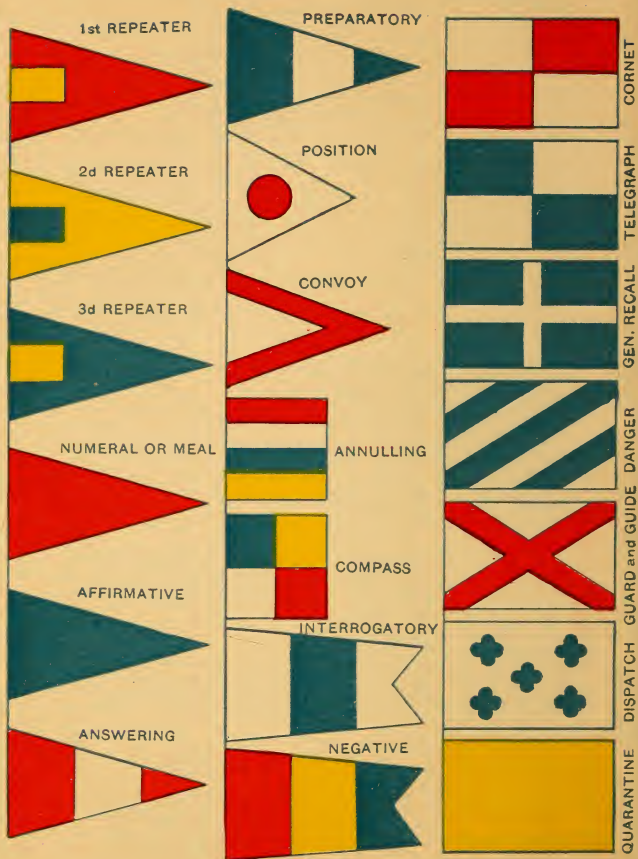


Plate 2. Art. 111. Pennants and Code-Flags.

or, for more distant signalling, by the use of semaphore-arms on a masthead (see General Order No. 181, of March 17, 1905).

(5) **Very's night-signals**, wherein numbers which refer (like flag-signals) to the Signal-Code, are made by firing colored lights in succession.

(6) **Electric night-signals**, by means of which any letter or numeral may be made by a single display.

(7) **International flag-signals**, a code devised primarily for communicating between vessels of different nationalities.

(8) **Special signals**.—In addition to the above, special signals are employed, such as Speed-Signals, Guide- and Position-Signals, Man-Overboard, Personal- (flags, pennants, lights, etc.), and Storm-Signals.

FLAG-SIGNALS.

111. Besides the signal numbers and the three repeaters, the Navy Code includes a number of flags and pennants, the functions of which are explained below. These flags and pennants are shown in the accompanying plates, and are named as follows:

Cornet.	Annuling-flag.
Guard (or Guide) Flag.	Position-pennant.
Answering (Date, and Divisional-Point) Pennant.	Quarantine-flag.
Preparatory-pennant.	Telegraph-flag.
Interrogatory-pennant.	Dispatch-flag.
Numeral (and meal) pennant.	Convoy-pennant.
Affirmative-pennant.	General-Recall.
Negative-pennant.	Boat-Recalls.
Danger- (and Designating-) flag	Church-pennant.
	Distinguishing-flags and pennants.

112. **Signal numbers**.—These flags, shown in plates, represent numbers 1 to 0, inclusive. When hoisted they read from up down, and the meaning of the number thus made is obtained from the code indicated by the flag or pennant which is hoisted with the signal. If no special flag is hoisted, the meaning of the signal will be found in the General-Signal Code.

113. **Repeaters**.—(1) First, second, and third repeaters are used in place of duplicate flags to repeat the first, second, or third numeral (from top), respectively, of a hoist.

(2) The first repeater is hoisted above a signal to show that it is a repeated signal. If the signal is telegraphic, the first repeater is hoisted over the telegraph-flag, to show that it is repeated.

NOTE.—(a) A signal to a certain ship is repeated by hoisting the distinguishing-pennant of ship addressed, above the first repeater.

(b) A signal from a ship to the flagship is repeated by hoisting first repeater above the signalling vessel's distinguishing-pennant.

(c) Flagships of squadrons and division-commanders, and ships specially designated as repeating ships, do not hoist the first repeater over repeated signals.

114. Cornet.—(1) Hoisted at the foremast head is a peremptory order for every one who is absent from the ship, whether on leave or on duty, to come on board immediately. Sometimes a gun is fired to call attention to it. It also indicates that a ship is under sailing-orders, and is about to get under way.

(2) The cornet hoisted over a signal indicates a ship's number; hoisted below a signal, her private number.

NOTE.—(a) Ships of the Navy, when meeting, are required always to show their numbers, or (if of the same command) their distinguishing-pennants, as soon as they are within signal distance.

(b) As soon as one ship reads the other's number she shall hoist the answering-pennant, but she will not haul down her number until answered by the other ship.

(c) In case two or more ships are in company, the senior alone is to signal her number, and answer the number of the communicating ship.

(d) A ship coming into port will be the first to make her number to the ships in the harbor. In case a ship is so situated that she can see the number of an incoming ship before the senior ship present, she shall repeat the number of the arriving ship (first repeater and cornet over ship's number). When she is answered by the senior officer, she will haul down her signal and repeat the number of the senior officer's ship to the vessel coming in.

(3) The cornet at the yard-arm calls the entire force for a general wig-wag signal. [See Art. 141, par. 3], or a general semaphore signal [See Art. 148, par. 3].

115. Guard- and guide-flag.—(1) When hoisted at the fore, during daylight, at anchor, indicates that the ship on which it is hoisted is charged with the guard-duty of the force to which it belongs. From *sundown* to *daylight* a red lantern will be displayed at the fore truck instead of the guard-flag.

(2) When in port, this flag hoisted by the flagship (or at night a red lantern displayed by the flagship) calls the guard-boat alongside.

NOTE.—All ships, including the flagship, or senior officer's ship, shall take guard-duty in turn; but neither flagship nor senior officer's ship shall hoist the guard-flag while doing guard-duty.

(3) When ships are under way, in formation, this flag is the guide-flag.

NOTE.—Where a tactical signal does not indicate which ship is to be the guide, the commander-in-chief will designate her by hoisting the guide-flag with the ship's distinguishing-pennant *over* it. The ship designated will answer by hoisting the guide-flag immediately.

A ship's distinguishing-pennant displayed under the guide-flag indicates that she is to haul down the guide-flag. This signal is answered by the ship designated hauling down the guide-flag.

116. Answering-pennant.—(1) When hoisted close up to the truck, gaff, or yard-arm, in answer to a signal, indicates that the signal has been read and meaning understood.

NOTE.—(a) In answering a signal the pennant should be hoisted where it can best be seen. It will be kept hoisted until the signal to which it is a reply is hauled down.

(b) In answering telegraphic signals, the pennant is lowered *halfway* only, while the telegraph-flag is flying, and is run *close up* in answer to each hoist.

(c) Ships exempted from obeying a signal, shall not answer.

(d) In case a signal is not understood, a signal to that effect is to be made at once by hoisting the interrogatory-pennant.

(2) The answering-pennant hoisted over a signal number refers to the table of date-signals.

(3) When hoisted in a signal in which the numeral-pennant is used, it indicates a division or decimal point. When decimals alone are made, the answering-pennant would come next below the numeral-pennant.

117. Preparatory-pennant.—(1) Hoisted over a signal means "Prepare to execute the signal now shown as soon as the signal of execution is made."

NOTE.—(a) The signal of execution is the starting of this signal (without the preparatory-pennant) from its point of hoist.

(b) The preparatory signal should be hoisted in ample time to admit all necessary preparations being made before the signal of execution is displayed.

(2) Hoisted alone at the yard-arm of senior officer's ship before morning or evening colors as a preparatory warning. When thus used, it is hoisted when the *first call* is sounded, and hauled down at first note of the bugle, or first beat of the drum.

118. Interrogatory-pennant.—(1) Hoisted over a signal, changes signal to the interrogatory form. For example, hoisted over a signal meaning "Land, I see," means "Do you see land?"

(2) It may ask permission; for example, hoisted over signal meaning "Get under way," signifies "May I get under way?"

(3) Hoisted in reply to a signal means "I do not understand," or "I cannot make out the signal," or "What signal is that?"

119. Numeral-pennant.—(1) Hoisted either over or under a signal, denotes that the signal indicates simply a numeral which is referred to by another signal made either simultaneously or just previously.

NOTE.—(a) In reporting latitude and longitude, the numeral-pennant is to be hoisted *above* the signal numbers when it is desired to indicate *north* latitude or *east* longitude, and *below* to indicate *south* latitude and *west* longitude.

(b) Similarly, in reporting variation of compass, numeral *above* indicates easterly variation, and *below*, westerly variation, expressed in degrees and minutes.

(c) In reporting time of day, numeral *above* indicates a. m.; *below*, p. m. 12 o'clock noon is reported as a. m. time, and midnight as p. m. time.

(d) In reporting soundings, the numeral-pennant *above* represents number of fathoms of line when bottom is reached; *below*, the number of fathoms of line out with no bottom. Soundings are reported in fathoms and tenths.

(2) Hoisted alone, when ship is at anchor, indicates that it is the crew's meal-hour.

NOTE.—When used as a meal-pennant, it is kept hoisted alone at some prominent place during the time that crew is at meals, on board all ships

at anchor, whether colors are hoisted or not. This pennant is used for this purpose without reference to the flagship.

120. Affirmative-pennant.—(1) Hoisted in answer to a signal means assent, consent, "Permission granted," or "Yes."

(2) Hoisted over a signal means that the specific work or service called for by that signal has been performed.

(3) Or it may be hoisted alone to indicate the completion of some duty called for by a previous signal.

(4) When the commander-in-chief is about to leave the ship officially, in the presence of other ships, the affirmative-pennant shall be hoisted, and it is hauled down when he shoves off.

(5) Hoisted when getting under way in squadron, as required by tactical signal-book.

121. Negative-pennant.—(1) Hoisted in answer to a signal means "Not granted," or "No."

(2) Hoisted over a signal puts it in the negative sense.

122. Danger-flag.—(1) Hoisted alone indicates danger ahead of signalling vessel.

(2) If hoisted over a compass-signal indicates the bearing of the danger from the ship making the signal.

(3) Used as a designating-flag, it is hoisted over the distinguishing-pennant of vessel designated.

123. Annuling-flag.—(1) Annuls all signals at that moment displayed on the same mast.

NOTE.—In this case only is it to be answered by hauling down all answering-pennants that have been hoisted in reply to the signals.

(2) Hoisted alone it annuls last signal made, or the last hoist.

(3) It is used to annul a signal previously made, by hoisting the signal again with annuling-flag over it, or hoisted at the same time.

(4) To annul an entire telegraphic signal, hoist annuling-flag over telegraph-flag.

124. Position-pennant.—(1) Hoisted by a ship in squadron indicates that she has attained an assigned position in a formation.

NOTE.—To be used in tactical evolutions only as prescribed in tactical signal-book.

(2) Used in anchoring in succession as required in tactical signals.

(3) Hoisted half-way, by a ship in formation, indicates that she has lost her position.

NOTE.—On regaining position she hoists pennant all the way up, then immediately hauls it down.

(4) Displayed by senior ship, with a distinguishing-pennant over it means "You are out of position," or "You are out of order."

(5) In compound squadron formations, it is worn by the

leader of the second division, or by the ship responsible for maintaining the prescribed interval.

(6) Hoisted under boat-code flag, refers to Boat Vocabulary [See Art. 185, (2)].

125. Quarantine-flag.—(1) Hoisted at fore, or at the most conspicuous position means “Ship is in quarantine.” It should be kept flying day and night.

(2) It is carried in all boats of a ship which has the quarantine-flag hoisted.

(3) It is hoisted by incoming ships to indicate that they desire pratique.

NOTE.—No boat (whether it contains officers or enlisted men) shall go alongside a ship, after she arrives in port, until her quarantine-flag is hauled down.

126. Compass-flag.—This flag is hoisted with a signal to indicate a magnetic course or bearing. If *over* signal it indicates number of quarter points to eastward of north; if *under*, to the westward of north.

NOTE.—Thus compass-flag *over* 37 indicates magnetic ESE $\frac{3}{4}$ E; *under* 37 WSW $\frac{3}{4}$ W. Compass-flag either *above* or *below* o indicates north. To record a compass-signal place letter C before or after signal-number, according as compass-flag is *above* or *below* the signal. The examples *above* would be recorded C 37, 37 C, C o, or o C, respectively.

127. Telegraph-flag.—When hoisted at the same time a signal is being made, it indicates that the meaning of the signal-numbers is to be taken from the Telegraphic Dictionary.

NOTE.—(a) The telegraph-flag will be kept hoisted (on same mast as signal, if possible) while signal is being made. If it is hoisted on same mast as a signal, other signals, general or otherwise, can be made from other hoists, not attached to the same mast, and these last signals are not to be taken as having any bearing on the sense of the wording of the telegraphic message.

(b) In case the telegraphic signal is not a general one, the distinguishing-pennant of the ship or ships addressed is to be hoisted *over* the telegraph-flag. A distinguishing-pennant *under* the telegraph-flag exempts the ship whose pennant is thus displayed from obedience to the signal.

128. Dispatch-flag.—(1) Hoisted at the fore, or forward, in a vessel indicates that she is on dispatch duty.

NOTE.—(a) When so engaged she should hoist below this flag the distinguishing-pennants of the ships to which she is bound, the pennant of the vessel first to be communicated with at the bottom of hoist. When this ship has been visited, the pennant should be unbent, and the dispatch-vessel proceeds to the next ship.

(b) No vessel should hoist the dispatch-flag without proper authority, but when it is hoisted she should not be interfered with by any officer junior to the one by whom she was sent on such service.

(2) In formation, under way, the dispatch-flag should be kept rounded up at the main-truck of every vessel ready to break in case of accident to machinery. When broken, it indicates “Break-down; ship not under control.” Other ships must then keep clear.

(3) Hoisted over a signal, or on the same mast, indicates that the meaning of the signal will be found in the geographical-list.

129. Convoy-pennant.—(1) Hoisted at the fore of all ships on convoy-duty. To be kept hoisted during daylight.

(2) Hoisted alone, at any other point, by the senior officer, it commands "Silence," during an evolution or drill where undue noise is being made.

(3) Hoisted over a signal-number, it refers to the number of an officer on the Navy List; the number refers to the annual navy register of the latest issue.

130. Boat-code flag.—(1) The letter "B" of International Code (red burgee), when hoisted on the same mast with the signal, indicates that the meaning of the signal will be found in the boat-code. All flag-signals made by *boats* are taken from this book, and therefore, with signals made by boats the code-flag is unnecessary.

(2) If the boat-code flag is at masthead, the signal is addressed to the entire flotilla of boats; if hoisted at a yard-arm or gaff, signal is addressed to the boats of that ship.

(3) If flagship hoists a vessel's distinguishing-pennant over the burgee at yard-arm or gaff, the signal is addressed to the boats of the designated ships.

(4) A ship signals to a particular one of her boats by displaying above the boat-code flag the flag or flags representing the boat's number. If the boat belongs to another ship, display that vessel's distinguishing-pennant over the boat's number and the boat-code flag.

131. General-recall flag.—(1) When hoisted at any time by the senior officer present, it is a peremptory order for all vessels or boats absent in chase, or on detached service, to return with all speed to their stations or ships.

NOTE.—The general-recall flag should not be hauled down until the signal is fully obeyed.

(2) The general-recall flag, hoisted under a distinguishing-flag or pennant, will indicate the recall of the designated force or ship to the indicated, or habitual, position, station or duty. If hoisted over a distinguishing-flag or pennant, it exempts the designated force or ship from obedience to the signal.

132. Boat-recalls.—Repeaters are assigned to boats as their day-recalls. At night, lanterns corresponding to their day-recalls are used. Special night-recalls may be assigned for special occasions.

NOTE.—(a) A boat-recall will be kept up until the boat is made out as returning in obedience to the signal.

(b) If necessary in cases of emergency, in the daytime, a gun may be fired to attract the attention of the boat.

(c) When a boat-recall is hoisted with the annulling-flag over it, it indicates that the boat so designated shall *not* return to the ship at the time previously prescribed, but will await further display of her recall.

133. Church-pennant.—Is hoisted over the ensign during the performance of divine service on board a ship of the navy.

134. Urgent-distress flag.—No. 0 of the navy code, displayed alone at any time, means "Assistance, immediate, I need."

135. Powder-flag.—(No. 1 of the navy code.) (1) It shall be displayed at the fore of all vessels while taking on board or discharging explosives or loaded projectiles, and in the bows of boats carrying powder.

(2) It will also be displayed by a ship engaged in target practice with her main or secondary battery, while firing is in progress. It shall be hauled down when the order CEASE FIRING is given.

136. Union-jack.—(Blue flag with a white star for every State in the Union.)

(1) In port is a sign of dress, and is to be worn forward in good weather, hoisted to a staff shipped in the bows, or on the head-booms.

(2) The jack hoisted at the fore is a signal for a pilot. A gun may be fired to call attention to it.

(3) Hoisted at the mizzen or at a yard-arm denotes that a general court-martial or court of inquiry is in session. It is hoisted, and a gun fired when court meets, and is hauled down when court adjourns for the day or is dissolved.

(4) When diplomatic representatives of the United States, of and above the rank of Chargé d'Affaires, officially visit naval ships, the jack is to be worn in the bows of the boats in which they take passage.

137. Distinguishing-flags and distinguishing-pennants.—(1) The commander-in-chief will assign a distinguishing-pennant, corresponding to a call letter, to each ship under his command. The letter "F" is always assigned to the flagship of the commander-in-chief.

(2) When a distinguishing-pennant is displayed *over* a signal, it indicates that the signal is made to that ship only; when displayed *under* a signal, it denotes that the indicated ship is exempted from the signal.

(3) A letter and distinguishing-pennant may be assigned to each section.

(4) Distinguishing-flags are assigned to squadrons of a fleet, and distinguishing-pennants to divisions. These flags and pennants are used in the same way as ship's distinguishing-pennants.

(5) Ship's distinguishing-pennants of the navy code each represent a letter of the alphabet. They are each made of combinations of colors (red, yellow, and blue) which represent the corresponding letters of the wig-wag alphabet—red corresponding to 1, yellow to 2, and blue repeating the preceding color—the colors being read from the staff to the fly.

(6) In addition to the uses already described, a distinguishing-pennant may be used by a flagship to call a vessel for a wig-wag

message. In this case it is hoisted half-way up [See Art. 141, par. (2)].

General Hints on Flag-Signalling.

138. (1) Skill in flag-signalling lies chiefly in the accuracy and rapidity with which flags are bent on, hoisted and hauled down. The question of knowing the meaning of any combination of flags hoisted by another naval vessel, or of being able to send any desired signal in accordance with the prescribed rules, is so simple that excellence is exhibited by the care and rapidity with which the mechanical operations of bending on, hoisting, etc., are carried out.

(2) Never answer a signal until its meaning has been understood. It is a reflection on the signalmen of a ship, and hence on the ship herself, to acknowledge a signal and then be forced to hoist the interrogatory, because, on reference to the signal-book, it is found to be unintelligible. Sometimes a mistake is made in sending, sometimes in receiving; hence until the meaning is looked up in the signal-code, a signal can mean nothing to the receiving ship, and should not be answered.

(3) Therefore, in flag-signalling *celerity* in bending on flags, hoisting and hauling down, and in obtaining the meaning of a signal from the signal-book, is secondary only to absolute accuracy in the several simple operations involved in sending a signal.

(4) Never hoist a signal until every preliminary preparation has been made, flags bent on and checked, signal-halliards led out through a snatch-block (if possible), and a man tending the signal to see that it goes up clear—then hoist it on a run.

(5) Check the signal again as it leaves the deck.

(6) The moment the answering-pennant is broken, haul the signal down with a run.

(7) Hand-over-hand hoisting is slow, and hence, if possible, signal-halliards should be rove through a snatch-block, or even around a brass rail, and run away with, both in hoisting and in hauling down.

ARMY AND NAVY (WIG-WAG) CODE.

139. (1) This code is in use both in the army and the navy. Each letter of the alphabet and each numeral from 1 to 0 inclusive is represented by a number composed of the numerals 1 and 2. The whole number opposite each letter or numeral stands for that letter or numeral.

(2) These numbers may be sent by the use of a hand-flag, or anything visible by day, or by a torch, lantern, or electric portable light at night, or by flashing-lights of any kind, or by sound-signals.

(3) The following is the wig-wag code:

A .....22	J .....1122	S .....212
B .....2112	K .....2121	T .....2
C .....121	L .....221	U .....112
D .....222	M .....1221	V .....1222
E .....12	N .....11	W .....1121
F .....2221	O .....21	X .....2122
G .....2211	P .....1212	Y .....111
H .....122	Q .....1211	Z .....2222
I .....1	R .....211	tion .....1112*

*Not to be used with electric night system.

Numerals.

1 .....1111	5 .....1122	8 .....2111
2 .....2222	6 .....2211	9 .....1221
3 .....1112	7 .....1222	0 .....2112
4 .....2221		

Abbreviations.

a .....after	n .....not	ur .....your
b .....before	r .....are	w .....word
c .....can	t .....the	wi .....with
h .....have	u .....you	y .....yes
xx3 "numerals follow" or "numerals end."		
sig. 3 "signature follows."		

Conventional Signals.

End of a word.....	3
End of a sentence.....	33
End of a message.....	333
Error	12.12.3
Acknowledgment, or "I understand".....	22.22.3
Cease signalling	22.22.22.333
Wait a moment	1111.3*
Repeat after (word).....	121.121.3.22.3 (word)
Repeat last word.....	121.121.33
Repeat last message.....	121.121.121.333
Move a little to right.	211.211.3
Move a little to left.....	221.221.3
Signal faster	2212.3*

*Not to be used with electric night system.

Code-Calls.

- I. C. U.—International-code, use.
- T. D. U.—(Navy) Telegraphic-dictionary, use.
- G. L. U.—(Navy) Geographical-list, use.
- B. S. U.—(Navy) Boat-signals, use.
- G. S. U.—(Navy) General signals, use.
- C. S. U.—Compass-signals, use.
- C. A. U.—Cipher "A," use.
- C. B. U.—Cipher "B," use.
- C. C. U.—Cipher "C," use.
- N. L. U.—Navy-list, use.
- V. N. U.—Vessel's numbers use.

Instructions for Using the System.

140. (1) Signalling with flag, torch, hand-lantern, or the beam of a search-light, requires the use of but one position and three motions.

(2) The first position is with the flag or other appliance held vertically, the signalman facing squarely toward the station with which it is desired to communicate.

(3) The first motion, "one," or "1"; the signal is waved to the right of the sender and will embrace an arc of 90°, starting with the vertical and returning to it, and will be made in a plane exactly at right angles to the line connecting the two stations.

(4) The second motion, "two," or "2," is a similar motion to the left of the sender.

(5) To make the third motion, "front," "three," or "3," the signal is waved to the ground directly in front of the sender, and instantly returned to the first position.

(6) Numbers which occur in the body of a message must be spelled out in full. Numerals may be used in signalling between stations having naval signal-books, using the code-calls.

(7) To use the torch or hand-lantern, a footlight must be used as a point of reference to the motion. For "1" and "2" the lantern is more conveniently swung by hand out and up from the footlight, and raised vertically for "3."

To Send a Message.

141. (1) To call a station, signal its initial or call-letter until acknowledged. To acknowledge a call or receipt of a message, signal "I understand."

(2) The flagship may call a ship by hoisting her distinguishing-pennant half-way. When ready to read the message, the ship called hoists the answering-pennant half-way; at the end of the message the flagship hoists distinguishing-pennant to the yard-

arm, and the receiving ship does the same with the answering-pennant, if the message is understood; otherwise she hoists the interrogatory-pennant.

(3) The cornet at the yard-arm calls the entire force for a general wig-wag signal. Any ship may be exempted by displaying her distinguishing-pennant *under* the cornet. All ships thus called will answer as prescribed above. Hauling down the distinguishing-pennant or the cornet, as the case may be, will be the acknowledgment of the answer.

(4) If the sender discovers that he has made an error, he should make the "front" and "12.12.3," after which he proceeds with the message, beginning with the word in which the error occurred.

General Hints on Wig-Wag Signalling.

142. (1) In sending a wig-wag message be careful to face the receiving station exactly.

(2) Use a flag only large enough to be clearly seen.

(3) Always get a clear background, if possible: the sky is the best.

(4) Make all movements quickly with a *decided but short pause* after each letter, and also after "front."

(5) Motions 1 and 2 are 90° only; not all the way to the ground.

(6) Keep the flag clear of its staff by exercising care in handling it; not by continually stopping to unwrap it.

(7) If in receiving a message one word is misunderstood, signal immediately "Repeat last word." It is no reflection on a signalman to break a message for this reason, and it is a poor signalman who, failing to receive a certain word, depends on guessing its meaning from the context, thus running the risk of reporting a signal incorrectly, or of requiring the entire message to be repeated if the missing word cannot be supplied. Such a signalman is unreliable, and as perfect reliability is the first requisite of a signalman, he should, if he repeats the fault after due warning, be at once dismissed from the signal-force. The importance of this principle of reliability is so great that it is suggested that signal-officers frequently compare their record-books with those from other ships in order to identify and eliminate all signalmen who cannot be relied upon.

(8) Should a cipher message be received, great care must be taken to receive and record every letter exactly as it is sent, as each individual letter is important.

(9) In all signalling, skill and rapidity must always be regarded as entirely secondary to accuracy, though after accuracy has been attained the relative skill of signalmen is shown by the rapidity with which they can send and receive messages.

FLASH-SIGNALS.

143. To send flash-signals with lantern, heliograph, or search-light:

(1) Use short flash for "1," two short flashes in quick succession for "2," and a long steady flash for "3." The elements of a letter should be slightly longer than in sound signals.

(2) To call a station, make the initial or call-letter until acknowledged. Then turn on a steady flash until answered by a steady flash. The calling station will then proceed with the message.

(3) All other conventional signals are the same as for the flag.

SOUND-SIGNALS.

144. (1) Made by use of the steam-whistle, fog-horn, bugle, bell, telegraph-key, or even by firing a gun, in case of emergency. They may be used in a fog, mist or falling snow, by day or night.

(2) When using the whistle, fog-horn or bugle, use one toot (about half a second) for "1," two toots (in quick succession) for "2," and a blast (about two seconds long) for "3."

NOTE.—The ear and not the watch is to be relied upon for the intervals.

(3) In the use of any other appliance by which a blast of a certain duration cannot be given, such as a bell, telegraph-key, gun, etc., one, two, and three strokes, dots, or shots in quick succession will indicate respectively 1, 2, and 3 of the wig-wag code.

Special Notes on Sound-Signals.

145. (1) **Steam-whistle (fog-signals).**—In signalling with the steam-whistle, be careful to see that the condensed steam is blown clear of the pipe before starting a message.

(2) Signals may be made by the steam-whistle, using either the army and navy code, or the general-signal code.

(3) Two ships must never attempt to make fog-signals at the same time.

(4) Ships answering a general inquiry from the flagship will answer in the order of their proximity thereto.

(5) During a fog, when cruising in formation, ships shall sound their distinguishing-calls in succession, in their order in the formation.

(6) Ships steaming in formation during foggy or snowy weather transmit signals as follows: Supposing, for example, the force is cruising in column and it is desired to change course to northeast; the flagship *calls* the leading ship, or, if she leads

herself, the next astern, and signals "Head of Column NE." Each ship in turn calls up her next astern and repeats the signal to her. When the *last* ship of the column has received the signal, *her* answer "22.22.3," followed by *her distinguishing-call*, shall be repeated from ship to ship, back to the flagship. The repetition of this signal will be at once an answer to the repeating ship and a call to the next ahead without any more signalling. The commander-in-chief will thus know that all his force understands the signal. If he gets back the answering call of some other ship he knows how much of his force understands the signal. When ready to change direction he makes the *signal of execution*, one blast followed by two toots. Each ship, as she changes her course, gives one blast if with port helm, two blasts if with starboard helm. If the evolution is of a different nature, the signal of execution is to be repeated by each ship in turn.

NOTE.—To send a signal to the next ship in column, follow the rules of the wig-wag code. Sound her call letter at short intervals until she answers (22.22.3); then proceed with the message, ending it with three blasts (3.3.3). If understood, the receiver answers "I understand" (22.22.3).

(7) In case of *stopping* to avoid danger, without previous signal, ships shall give toots for five seconds, and in case of *backing*, without previous signal, they shall give three blasts.

146. (1) **Gun.**—In cases of extreme urgency, guns may be fired, to refer to signals in the *general signal-book*. The numbers will be made as in the numerals of the naval code (wig-wag), one gun being a "1," two guns in rapid succession a "2," and three guns in rapid succession a "3"; the affirmative or "yes," 1212; the negative or "no," 2121; the numeral, 2122; the interrogatory, 1211.

(2) **Telegraph-key.**—In telegraphy, working with an ordinary telegraph-key, the army and navy code will be used [144, (3)].

SEMAPHORE-SIGNALS.

147. (1) The U. S. Navy has recently adopted the two-arm semaphore system of signals, whereby each letter and numeral is indicated by a certain position of the arms, as shown below. These signals may be made either by the arms of the body, using small hand-flags (as shown below), to increase visibility, or they may be made by mechanical arms on a masthead, worked by proper appliances from deck.

(2) The following table shows the semaphore-alphabet, conventional signals, and instructions for their use.

Two-arm Semaphore-alphabet.













 <p>A 1</p>	 <p>B 2</p>	 <p>C 3</p>
 <p>D 4</p>	 <p>E 5</p>	 <p>F 6</p>
 <p>G 7</p>	 <p>H 8</p>	 <p>I 9</p>
 <p>J LETTERS</p>	 <p>K O (ZERO)</p>	 <p>L</p>

Plate 3. Art. 147. Semaphore-Signals.

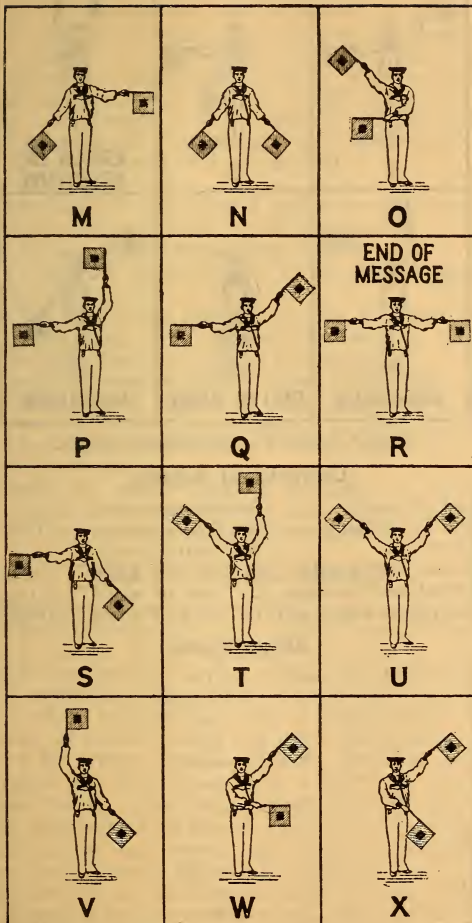


Plate 4. Art. 147. Semaphore-Signals.

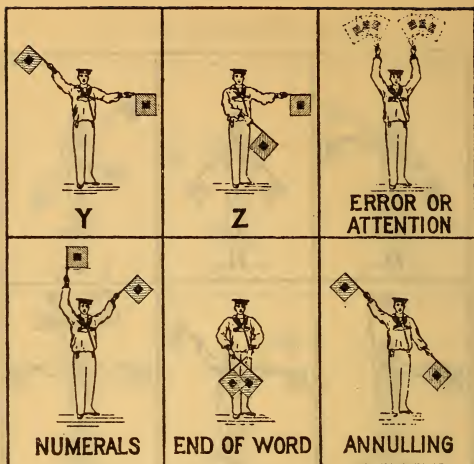


Plate 5. Art. 147. Semaphore-Signals.

Conventional Signals.

End of word.....See instructions.
 End of message.....See instructions.
 Error.....See instructions.
 Repeat last word....C, "end of word"; once.
 Repeat last message..C, "end of word"; 3 times.
 Use paper and pencil.P, "end of word"; twice.

Abbreviations.

A	"end of word"....after
B	" " "before
C	" " "can
H	" " "have
N	" " "not
R	" " "are
T	" " "the
U	" " "you
UR	" " "your
W	" " "word
WI	" " "with
Y	" " "yes
PG	" " "permission granted.
NG	" " "permission not granted
XX	" " "numerals follow.

Instructions.

148. (1) To communicate with a station:

Face the station and wave the flags over the head to attract attention, making at frequent intervals the call-letter of the station. When the station called is ready to receive the message, it answers by displaying its own call-letter until the sender makes the "alphabetical" or "numeral," as the case may be. Then proceed with the message. At the end of each word bring the flags across the lower part of the body.

(2) To call a ship:

Hoist international-code letter J and make code letter of ship, then proceed as in paragraph (1) of this Article.

(3) To make a general semaphore signal:

Hoist Cornet; all ships answer by answering-pennant; then make signal.

(4) At the end of the message extend the arms horizontally and wave the flags until the receiver answers in the same manner, showing that the message is understood.

(5) Should the receiver miss a word, he signifies the fact by waving the flag over his head. The sender will then cease signalling and wave his flags similarly to show that he understands. The receiver then makes "repeat last word," or whatever he wishes to say.

(6) Should the sender make a mistake, he will make the "error" signal until answered by the receiver with the same signal. He then proceeds with the message.

VERY'S NIGHT-SIGNALS.

149. Night-signals are made by Very's system of projecting red and green stars into the air; by the electric system of incandescent lamps in a vertical hoist, showing either red or white lights, singly or in combination, to the number of four lamps; by the flashing or occulting of hand-lamps; search-lights and other lights showing a white ray; by the torch, swinging white lantern, or waving beam of a search-light, and by sound-signals.

150. (1) By Very's system.—When messages are sent by Very's system, the *navy-signal book* is used. By the other systems, either the navy-signal book or the wig-wag code is used.

(2) The numerals 1 to 0 are each represented by a certain combination of red and green stars (four in number), fired in succession from a pistol. If red is substituted for 1, and green for 2, the numerals are the same as in the wig-wag code. By this means the number corresponding to any signal in the signal-book may be made.

(3) In making a signal, cartridges of proper color are picked out and placed in proper order. A spare pistol and spare

cartridges of both colors should always be at hand in case of a miss-fire. When all is ready the *call* is made as described below.

(4) **After having called the station**, make code-call, to indicate whether a general, telegraphic, geographic or boat-signal is being made. Then fire the cartridges into the air so they may be seen by the other ship. The receiver, after you have stopped firing stars, divides his signal (which he has noted down, in the order in which the stars were fired), into groups of four; places over each group the corresponding number, and by reference to the code indicated by the code-call, picks the meaning out of signal-book.

Very's Code.

151. The following table shows Very's night code: *

NOTE.—The letter R stands for red and the letter G for green, and each letter designates a separate star or cartridge. Bracketed stars are a pair of different colors discharged together from two pistols, so that both are visible in the air at the same time.

- | | | |
|-----|------------|------------|
| (1) | 1. R R R R | 6. G G R R |
| | 2. G G G G | 7. R G G G |
| | 3. R R R G | 8. G R R R |
| | 4. G G G R | 9. R G G R |
| | 5. R R G G | 0. G R R G |
- (2) Affirmative or "Yes," R G R G
 Negative or "No,"... G R G R
 Numeral G R G G
 Interrogatory R G R R
 Annuling R R G R
 Divisional point, date, designator, or interval, G G R G
 Telegraphic Dictionary; $\left\{ \begin{smallmatrix} R \\ G \end{smallmatrix} \right\}$ Bracketed.
 Geographical List; $\left\{ \begin{smallmatrix} R \\ G \end{smallmatrix} \right\}$ Followed by a rocket.
 Boat-Signals; Rocket followed by $\left\{ \begin{smallmatrix} R \\ G \end{smallmatrix} \right\}$
 Navy List; $\left\{ \begin{smallmatrix} R \\ G \end{smallmatrix} \right\}$ $\left\{ \begin{smallmatrix} R \\ G \end{smallmatrix} \right\}$

(3) General-call—rocket followed by G.

(4) Message-call—G without the rocket.

(5) The squadron, division, or ship's call—the "number" of squadron, division or ship. (The squadron and division calls are given on Plate VII, Tactical-Signal Book of the U. S. Navy, and are distinguished by the fact that the former are always made of two stars and the latter of three stars.) Ship's numbers are those given in the list of vessels of the U. S. Navy at the end of the General Signal Book.

- (6) Answering or "I understand"—R.
- (7) Repeating or "I do not understand"—G.
- (8) Danger or distress—R repeated several times in quick succession.

General Instructions.

152. (1) Squadron, division, or ships' numbers are denoted by being immediately preceded by a rocket.

(2) *All night-drill signals*, and signals which require a change of formation, course, speed, or order, shall be considered as *preparatory*. The signal of execution will be a rocket.

(3) All other messages are intended for immediate execution unless the message itself states or distinctly implies a lapse of time before execution.

(4) A message, like "Send a boat," will be executed at once, whether a rocket follows or not. If a rocket should be used in this case, it would denote urgency.

(5) All night-signal messages, whatever their nature, require an immediate response. If the message is understood, the immediate response will be R; if not understood, it will be G.

NOTE.—This is to prevent any mistake as to what ship is making the call. Should a number of ships be in company it is possible that one or more might not see the original call.

Rules.

153. (1) RULE 1.—A ship desiring to exchange signals at night begins by making a "Call." This signal shall be repeated at intervals of about two minutes until it is answered.

NOTE.—It will be remembered that there are three kinds of calls: First, the general-call, which is to all ships that may be within signal distance. Any ship seeing this call will answer at once, without regard to the actions of others. Second, the squadron, division, or ship's call, which is addressed to a particular ship or group. This call will be answered only by the chief of the group or the single ship called. Third, the message-call, which denotes the desire to communicate a second message to the same ship or group to which a preceding signal has been made. It will be answered only by the ship previously addressed. In case no previous signals have been made, the message-call may be used instead of the general-call, and will be so considered and answered by all.

(2) RULE 2.—Upon seeing a "Call," all ships to which it may be addressed should respond by making the "Answering."

(3) RULE 3.—Every distinct message must be preceded by a "Call" and the "Answering."

EXAMPLE.—Suppose the *Alert* to arrive off a port at night where the flagship *New York* and several other ships of the squadron are at anchor. The *Alert* makes the "General" (or she may make the message) call. *New York* immediately makes "Answering." *Alert* then makes her number (rocket 5). *New York* answers and then makes her number. *Alert* answers. *Alert* then calls message. *New York* answers. *Alert* asks permission to anchor. *New York* answers and then makes the "Affirmative."

Alert answers. The *New York* may then, if desirable, call the *Alert* and make any necessary communication. But one course of messages is to be maintained at the same time. It will be observed that a "Call" made to a group of ships by a detached or incoming ship will be answered only by the flagship or senior officer present.

(4) RULE 4.—In making a combination or series of combinations, the stars are projected deliberately, one by one, right through from the first star to the last, without regard to time intervals either between the stars or between the combinations.

NOTE.—It has been noticed that stars projected against the wind burn brighter and longer than those fired across or with the wind. But to prevent uncertainty as to which ship is signalling, the stars should generally be fired vertically, or so as to fall toward the ship receiving the signal.

(5) RULE 5.—The person receiving the message will note the stars as they appear, dividing them into groups of four, without any regard to time intervals, thus ascertaining the signal-number.

NOTE.—Through some unforeseen cause, a long interval may elapse between two stars of a message. No account must be taken of this as long as it is less than about a minute. Again, a star may be broken by the shock of discharge and show several stars of the same color in the air. Record but one star.

(6) RULE 6.—When, after waiting about one minute, the receiver of the signal sees no more signal stars, he will consider the signal finished. If the signal is understood, he will make the "Answering"; if it is not, he will make the "Repeating."

NOTE.—As a guide to the receiver, it will be remembered that, in all signals from the general-code, there are never more than sixteen stars (not counting the interrogatory, numeral, etc.). He can, therefore, make a close estimate as to the last star of a signal and answer accordingly.

(7) RULE 7.—If, during the course of a signal, the receiver is led to believe that he or the sender has made a mistake, or if confusion of any kind arises, he will at once make the "Repeating."

(8) RULE 8.—If, during the course of a signal, the sender sees the "repeating," he will stop at once, wait about a minute and then recommence the signal from the beginning. If at the close of a message he sees the "Repeating" instead of the "Answering," he will recommence from the beginning.

NOTE.—It will be noticed that unless the mistake occurs at the fourth, eighth, twelfth or sixteenth star, the signal cannot be read, as the record is incomplete; therefore, the receiver is bound to make the "Repeating." If the mistake is with the fourth, eighth, twelfth or sixteenth star, *fire one more and then wait.*

(9) RULE 9.—The *red* star made and repeated in quick succession as a "call," without the rocket, is a signal of distress and indicates need of immediate assistance.

(10) RULE 10.—All special directions, as "Navy list use," "Telegraph dictionary," etc., are bracketed stars, or else contain one or more rockets.

(11) RULE 11.—Individual pairs of bracketed stars must be projected separately, and so that only the two stars of any one pair will be seen in the air at the same time. The stars of a pair are always of different colors.

(12) RULE 12.—The divisional point (G G R G) will be used to separate the numbers which represent letters, syllables and words in a message taken from the telegraphic dictionary. In case a date-signal occurs in the body of a telegraphic message, the "Divisional point" will be repeated between the last word signalled and the *number* representing the date. The context of the signal will always show whether the G G R G is used as a designator, divisional point, or to make a date-signal.

(13) RULE 13.—In making signals for time, and latitude and longitude, when the minutes are less than ten (10), the zero must be made before the unit.

(14) RULE 14.—All exploded caps must be driven out as soon as possible after firing.

ELECTRIC NIGHT-SIGNALS.

154. (1) The lanterns in the signal-set are white and red. If red light means 1, and white light means 2, the alphabet and numerals are the same as the wig-wag, except that in the case of numerals the upper light is always pulsated.

(2) A slight difference exists however in the conventional signals as follows:

Wig-Wag Code.

2212 means "Signal faster."

1111 means "Wait a moment."

2111 no conventional meaning in wig-wag code.

1112 means "tion."

Electric Night-Signals, Steady display.

WWRW is the *interval*, used instead of 3 in wig-wag.

RRRR is the *Cornet*, used as a general-call.

WRRR is the *Code-Call*, used to precede the code-signal when pulsator is not working.

RRRW is *letters or alphabet-call*, used to show that signal is to be spelled out.

155. The twenty-six letters and the above four signals make thirty displays in all. These are steady displays. By pulsating the upper light of each of these, twenty-eight more displays having an entirely different meaning may be made (see Art. 156, Par. 2), thus permitting individual displays for numerals, code-calls, etc. The meaning of all displays which can be made on the electric signal-set are shown in the table below.

Character.	Wig-Wag Flag, Torch, or Flash-Lan- tern and Sound-Signals	Electric Night-Signals.	
		Steady Display.	Upper Light Pulsated.
		Inner Circle of Keyboard.	Outer Circle of Keyboard.
A.....	22	WW	C A U
B.....	2112	WRRW	0
C.....	121	RWR	Repeat (following rules for conven- tional signals under wig-wag code).
D.....	222	WWW	T D U
E.....	12	RW	Error
F.....	2221	WWWR	4
G.....	2211	WRRR	6
H.....	122	RWW	C S U
I.....	1	R	.....
J.....	1122	RRWW	5
K.....	2121	WRWR	Negative
L.....	221	WWR	G L U
M.....	1221	RWWR	9
N.....	11	RR	C B U
O.....	21	WR	C C U
P.....	1212	RWRW	Affirmative
Q.....	1211	RWRR	Interrogatory
R.....	211	WRR	I C U
S.....	212	WRW	G S U
T.....	2	W	.....
U.....	112	RRW	N L U
V.....	1222	RWWW	7
W.....	1121	RRWR	Annulling
X.....	2122	WRWW	Numerals
Y.....	111	RRR	V N U
Z.....	2222	WWWW	2
Cornet (General-call).	....	RRRR	1
Letters (or Alphabet- call).....	....	RRRW	3
Code-call.....	....	WRRR	8
Interval (Date, divi- sional point, or des- ignator).....	....	WWRW	B S U

Remarks.

156. (1) All significations contained in the outer circle of the keyboard (shown in above table) are distinguished from those in the inner circle by pulsating the upper light for the former.

(2) Significations in the outer circle, corresponding to I and T cannot be given, as they are single-light displays and there would be no distinction between pulsating the upper light and flashing the whole.

(3) From the above table it will be observed that numerals are included among the signals that have the upper light pulsated. This serves still further to distinguish them from letters, the first distinctive feature, before making them, being the turning on of the display for "Numerals." The resumption of letters after using numerals will be indicated by the upper light being no longer pulsated, but the display "letters" should also be turned on as an additional indication.

General Instructions.

157. (1) Each display, as made, is repeated by the ships receiving the signal; this repeating takes the place of the answering-pennant.

(2) In using the letters-code, if there are only a few ships present, or called, and they are in plain view of the flagship, it will not be necessary for them to repeat each display. Experience shows that this repeating (of wig-wag code) may be safely neglected with fairly proficient signalmen, and much time will thus be saved. In this case acknowledge by repeating the "Interval, end of sentence."

(3) If not understood at any time during the message, make "Interrogatory," and when this display is answered by the sending ship, make "Repeat," following the rules for conventional signals under the wig-wag code.

(4) If, because of the message being very important, or for any other reason, the flagship should wish each display repeated, in cases where this would not be done under these instructions, the signal "Repeat" (C, upper light pulsated) must be made immediately after the call. After this, "Letters," should be made, and the signal proceeded with, each display being repeated by the receiving ships.

(5) All night-drill signals, and signals which require a change of formation, course, speed, or order shall be considered *preparatory*.

(6) The signal of execution will be the turning off of the display of the cornet (RRRR).

(7) All other signals are intended for immediate execution, unless the message itself states, or distinctly implies, a lapse of time before execution.

(8) **The cornet (RRRR)** displayed initially, that is, as preliminary to signalling, corresponds to the rocket in the Very's night-signals, and calls all ships within signal distance. After a signal, as explained above, it is the signal of execution.

(9) **"Call" lights** are given in the plates, in the Tactical Signal Book, corresponding to the distinguishing-flags and pennants to be assigned to the different squadrons, divisions, and ships. The letter F is always assigned to the flagship of the commander-in-chief.

(10) **A squadron, division, or ship is called** by turning on and off (flashing at short and regular intervals) the call-letter assigned, until such call is answered. This method prevents confusing a "Call" with any signification in either the inner or the outer circle of the keyboard.

(11) **Ships acknowledge the "Call"** by turning on the same display, flashing it likewise. (It will be observed that the steady display of cornet (RRRR) is a call for the entire force present; and the same display flashed calls the 1st squadron.)

(12) **In pulsating the upper light**, and in flashing an entire display, the lights must be left turned off and turned on for a sensible length of time—the former to let the glow die out and leave the interval of darkness appreciable, and the latter to give time for it to be easily read. Unnecessary use of the make-and-break key is also to be avoided, as tending to injure it.

(13) The electric night system is never to be used for other than official signals.

Rules.

158. (1) RULE I.—All lights, except speed indicators, which might cause confusion or interfere in any way with the signal lights, must be extinguished or screened while signalling.

(2) **RULE II.**—A ship desiring to exchange signals will display the cornet (RRRR) or the call light-s of the squadron-s, division-s, or ship-s with which it is desired to communicate, which will be answered by a similar display from the squadron or division called, or from each ship successively called.

NOTE.—If more than one ship is called, the call letters are separated by displaying the interval (WWRW). Each call will be answered (repeated) only by the ship called.

(3) RULE III.

(a) The calls having been answered, proceed to send the message, as follows: If the message is to be spelled out, display the letters or alphabet-call (RRRW), and when answered proceed with the message. In all other cases make the display (pulsating the upper light) corresponding with the signification to be expressed, such as "General-signals, use," "Compass-signals, use,"

(b) In case of failure of the pulsating key, the "Code-call" (WRRR) is first to be made and answered, and then the three initial letters given as code-calls in the following table must be made. This requires four displays:

(c)

Code-Call.	Signification.
I. C. U.	International-code, use.
T. D. U.	Telegraphic-dictionary, use.
G. L. U.	Geographical-list, use.
B. S. U.	Boat-signals, use.
B. V. U.	Boat-vocabulary, use.
G. S. U.	General-signals, use.
C. S. U.	Compass-signals, use.
C. A. U.	Cipher "A," use.
C. B. U.	Cipher "B," use.
C. C. U.	Cipher "C," use.
N. L. U.	Navy-list, use.
V. N. U.	Vessels' numbers, use.

(d) The code-call having been repeated back, proceed at once with the signal.

NOTE.—When any of the above code-calls are made by a flagship or senior officer's ship, not preceded by a general, squadron, division, or ship's call, it indicates a message to the ships of the group of which such senior or flag officer is in command. Where a previous message has been sent, it indicates a second message to the same ship or group to which a *preceding* signal has been made.

Arriving off a port at night, a ship not attached to a squadron will ordinarily use Verry's signals to make her number. To use the electric system, however, she would make "Cornet," and when answered by "Cornet" from senior ship present, would make code-call: "Vessels' numbers, use," and when this is answered then her number.

(4) RULE IV.—To send a Compass-signal, first make the code-call, "Compass-signals, use"; then "Interval"; then the compass-signal as it would be recorded (the letter "C" *before* or *after* the proper number to indicate the required course); then "Interval, end of sentence."

NOTE.—It must be borne in mind that a compass course *alone* is an order for each ship to change to that course. If, therefore, it is desired to change direction of head of column at night, the compass course must be preceded by the words "Column," or "Head of Column;" or by the signal "Column right" or "Column left." A change of course may also be spelled out without using a code-call.

(5) RULE V.—

(a) In using the letters- or alphabet-code, the interval (WWRW) takes the place of the "3," or "front," of the wig-wag code. Displayed once, it means "end of word"; displayed twice, "end of sentence"; displayed three times, "end of message," or "final."

(b) If a message bears a signature, the "final" should not be made until after the signature, the latter immediately following the interval marking the end of the last sentence.

(6) RULE VI.—The interval (WWRW) will be used as a "Divisional point" to separate the numbers which represent letters, syllables, and words in a message taken from the telegraphic dictionary. In case a date-signal occurs in the body of a telegraphic message the interval (WWRW) will be repeated between the last word signalled and the number representing the date.

NOTE.—The context of the signal will always show whether the interval (WWRW) is used as a divisional-point, a designator, or to make a date-signal.

(7) RULE VII.—In making signals for time, and for latitude and longitude, when minutes are less than ten (10) the zero must be made before the unit.

(8) RULE VIII.—The "Affirmative" and "Negative" may be used in answer to any signal. If a message is not understood, the "Interrogatory" (RWRR) will be displayed. The "Annuling," annuls the whole signal back to and including the code-call.

(9) RULE IX.—To indicate that an error has been made, make "Interval," then "Error," then "Interval," and begin with the word in which the error occurred.

(10) RULE X.—"Repeat" displayed once means "repeat last word"; displayed twice, "repeat last sentence"; displayed three times, "repeat last message." If during the course of a message the *sender* sees the "repeat" signal, he shall stop at once and repeat the last word, sentence, or message, as requested.

(11) RULE XI.—When a ship intervenes between or masks the signal lights of two others desiring to communicate, the intervening ship must repeat the displays.

(12) RULE XII.—But one course of messages is to be maintained at the same time. If the flagship or senior officer makes a call when communication is going on between two or more ships, all signalling must cease until the message sent by the flagship or senior ship is finished.

INTERNATIONAL SIGNALS.

NOTE.—For complete detailed instructions as to the use of the International Code, see International-Signal Book.

159. (1) These are a set of signals which have been adopted by all nations in order that all ships may have a method of signalling to each other.

(2) This code consists of twenty-six flags, burgees or pennants,

one for each letter in the alphabet, and a code-pennant which is also used as an answering-pennant. These are shown in the accompanying plates.

(3) In the international code, any particular hoist has the same meaning in each language.

(4) When making a signal by this code, look up the signal in the international-signal book, and bend on (in order, reading from up, down), the flags corresponding to the letters abreast this signal.

(5) Hoist the code-pennant under the ship's ensign, and hoist the signal where it can best be seen.

(6) If receiving a message, the meaning will be found abreast the letters represented by the flags in the hoist.

(7) The following instructions show in a general way the manner in which the international-signal book is divided, and how the arrangement of the flags gives a distinctive character to the signal:

(a) **One-flag signals.**—B, C, D, L, P, Q, S, hoisted singly, have special significations. The code-flag over each of the signal-flags are signals of a general nature, of most frequent use. Signal-flags hoisted singly after *Numeral-signal No. 1* refer to the numeral table, as do also **two-flag signals** with code-flag *under* them.

(b) **Two-flag signals** without code-flag are urgent and important signals; with code-flag *over* them are latitude and longitude, time, barometer, and thermometer signals.

(c) **Three-flag signals** express points of compass, money, weights and measures, and all ordinary signals required for communication.

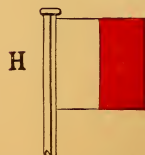
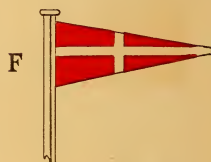
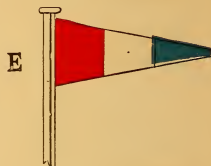
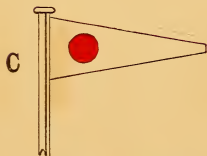
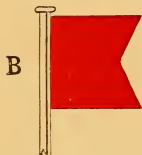
(d) **Four-flag signals** with a burgee (A or B) uppermost are geographical signals; with C uppermost are spelling or vocabulary signals; with G uppermost are names of men-of-war; with square flag uppermost are names of merchant vessels and are not in signal-book.

NOTE.—If the vessel flies a U. S. flag, it will be found in list of U. S. merchant vessels. Naval vessels are usually not supplied with merchant lists of foreign nations, and therefore the vessel cannot be generally made out; there can, however, be no doubt as to the meaning of a four-flag international signal with square flag on top.

Flags and Pennants to be Used in the International Code.

DIMENSIONS IN FEET.

	Size 3.		Size 6.	
	Hoist.	Fly.	Hoist.	Fly.
Burgee.....	7.25	7.25	2.90	2.90
Pennant.....	5.83	18.00	2.00	5.00
Square Flag.....	7.25	7.25	2.90	2.90



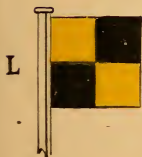
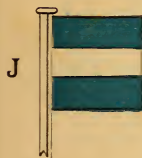
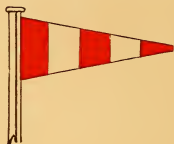
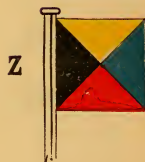
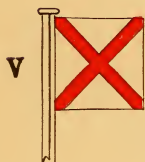
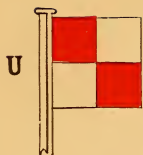


Plate 7. Art. 159. International Code.



“Code-Flag” and “Answering-Pennant.”

NOTE.—When used as the “Code-flag” it is to be hoisted under the ensign.

When used as the “Answering-pennant” it is to be hoisted at the mast-head or where best seen.

Plate 8. Art. 159. International Code.

INTERNATIONAL SIGNALS OF DISTRESS.

160. When a vessel is in distress and requires assistance from other vessels or from the shore, the following shall be the signals to be used or displayed by her, either together or separately:

161. In the daytime—

(1) A gun or other explosive signal fired at intervals of about a minute;

- (2) The International-Code Signal of Distress indicated by NC;
- (3) The distant signal, consisting of a square flag, having either above or below it a ball or anything resembling a ball;
- (4) The distant-signal, consisting of a cone, point upward, having either above it or below it a ball or anything resembling a ball;*
- (5) A continuous sounding with any fog-signal apparatus.

162. At night—

- (1) A gun or other explosive signal fired at intervals of about a minute;
- (2) Flames on the vessel (as from a burning tar-barrel, oil-barrel, etc.);
- (3) Rockets or shells, throwing stars of any color or description, fired one at a time at short intervals;
- (4) A continuous sounding with any fog-signal apparatus.

INTERNATIONAL SIGNALS FOR A PILOT.

163. The following signals, when used or displayed together, or separately, shall be deemed to be signals for a pilot:

164. In the daytime—

- (1) The jack, to be hoisted at the fore;
- (2) The International-code pilot-signal indicated by PT;
- (3) The International-code flag S, with or without the code-pennant over it;
- (4) The distant-signal, consisting of a cone, point upward, having above it two balls or shapes resembling balls.

165. At night—

- (1) The pyrotechnic light, commonly known as a blue light, every fifteen minutes; or
- (2) A bright white light, flashed or shown at short or frequent intervals just above the bulwarks for about a minute at a time.

SPECIAL SIGNALS.

Speed-Cones.

166. During the day, when under way, the speed of each ship is to be indicated by a black cone, $2\frac{1}{2}$ feet at base and $3\frac{1}{2}$ feet in height. It is hoisted at the yard-arm of ships in squadron. The cone is on the side toward the guide; the cone of the guide-vessel is on the side toward the other vessels. The place of hoist of the speed-cone must not be changed from one side to another

* This is purely a code-signal and is not one of the signals of distress given in the "Rules of the Road," the needless exhibition of which entails penalties upon the master of the vessel displaying it.

during an evolution, and the second cone must be hoisted in its place before beginning to haul the first one down.

167. The meanings of the various positions of the speed-cone are as follows:

(1) Hoisted at yard-arm, *apex-up*—"Going ahead at prescribed speed."

(2) Hoisted part of the way to yard-arm, *apex-up*—"Going ahead at a speed slower than prescribed speed, proportionate to the cone's distance from yard-arm."

(3) Hauled down out of sight—"Stopped; engines at rest."

(4) Hoisted part of way to yard-arm, *apex-down*—"Engines backing."

(5) Hoisted at yard-arm, *apex-down*—"Going astern, engines backing hard."

(6) The affirmative-pennant hoisted at yard-arm with speed-cone, *apex-up*, indicates "Going ahead at a speed faster than that prescribed for the squadron."

168. (1) The position of the cone shall be changed to indicate a change of speed *as soon as the signal to change speed has been sent to the engine-room*.

(2) When at *half-distance*, a speed-cone is to be used on each side of twin- or triple-screw ships to indicate the performance of the twin-screws.

(3) The senior officer may direct the use of a speed-cone on each side of twin- or triple-screw ships when standing into narrow channels or into narrow berths for anchoring, or when getting under way. Whenever the flagship uses two speed-cones, the other ships shall do the same without further orders.

(4) The speed-cone and answering-pennant should not be hoisted at the same yard-arm.

Electric Truck-Lights.

169. Ships fitted with electric plants, use electric truck-lights at night, for the same purpose that speed-cones are used in the day. Their meaning is indicated as follows:

(1) A *steady white* light, at either fore- or main-truck, is to be displayed when steaming in formation, and indicates: "In position and *going ahead* at prescribed speed."

(2) *Flashing the white* light indicates: "Going ahead at a speed materially *slower* than that prescribed."

(3) *Turning off* the white light indicates: "Out of position and temporarily out of the formation."

(4) *Turning off the white light and turning on the red* light indicates: "Engines are stopped."

(5) *Flashing the red* light: "Engines are backing."

Oil Lanterns.

170. If ship is not fitted with electric plant, oil lanterns are used instead of electric truck-lights, as follows:

(1) *One white lantern* at truck or yard-arm indicates: "Going ahead at prescribed speed."

(2) *Two white lanterns*, one at truck or yard-arm, the other half-way up, indicate: "Going ahead at a speed materially *slower* than that prescribed."

(3) *White lanterns lowered* out of sight indicates: "Out of position and temporarily out of formation."

(4) *One red lantern* at truck or yard-arm indicates: "Engines are stopped."

(5) *Two red lanterns*, one at truck or yard-arm, the other half-way up, indicate: "Engines are backing."

171. (1) **In column**, in case of emergency, the signal for *stopping* is to be supplemented by toots on the steam whistle for five seconds, and that for *backing* always by three blasts of the steam whistle.

(2) When a ship in column flashes her white light the one next astern shall flash her own white light for five seconds in acknowledgment, and then turn on the steady white light again. This will be a signal also to the next astern that the ship ahead is slowing.

(3) When the white light is turned off it will be understood by ships astern that the ship has sheered *clear of the alignment*, and is thereby out of the formation.

(4) When oil lanterns are used, the signals for slowing and stopping will be acknowledged by waving a red lantern from the bridge of the next astern.

(5) In every case ships astern must maneuver to avoid collision.

(6) Except in an emergency, ships should sheer out of the formation at once if obliged to stop temporarily.

(7) The fore truck-lights are not to be used for speed indicators, except in case of the failure of those on the main.

(8) The truck-lights must not be used while under way for any other purpose than speed indicators.

(9) The signals for slowing, stopping, and backing must be kept displayed until a change is made calling for a different signal.

(10) All speed lights are extinguished the moment an anchor is let go.

Additional Lights, Personal Lights, etc.

172. (1) At night, when under way in formation, each ship shall carry, in addition to the lights prescribed by law, a white light on her rail aft, so screened as to show only from right astern to two points on each quarter.

(2) All flagships will carry a top-light at the after masthead at night in port, or at sea when in company with other ships.

(3) At night, in approaching an anchorage where other men-of-war are likely to be found, a vessel acting singly, or each ship in

a squadron, shall hoist at the peak two white lights in a vertical line. United States ships, at anchor in a port, shall answer any such signal by hoisting the same display.

(4) At anchor in port, a ship shall display at her peak a white light when her captain is absent at night.

(5) A flagship shall display a hoist of three white lights at her peak, when the flag officer is absent at night. Absence shall be construed as for a period less than twenty-four hours.

Signals of Life-Saving Service.

173. (1) The following signals, approved by the International Marine Conference, convened at Washington in October, 1889, have been adopted by the life-saving service, and will be used and recognized by the officers and employees as occasion may require:

(2) Upon the discovery of a wreck by night, the life-saving force will burn a red pyrotechnic light or a red rocket to signify: "You are seen; assistance will be given as soon as possible."

(3) A red flag waved on shore by day, or a red light, red rocket, or red Roman candle displayed by night, will signify: "Haul away."

(4) A white flag waved on shore by day, or a white light slowly swung back and forth, a white rocket, or a white Roman candle fired by night, will signify: "Slack away."

(5) Two flags, a white and a red, waved at the same time on shore by day, or two lights, a white and a red, slowly swung at the same time, or a blue pyrotechnic light burned by night will signify: "Do not attempt to land in your own boats. It is impossible."

(6) A man on shore beckoning by day, or two torches burning near together by night, will signify: "This is the best place to land."

(7) Any of these signals may be answered from the vessel as follows: In the daytime, by waving a flag, handkerchief, a hat, or even the hand; at night, by firing a rocket, a blue light, a gun, or by showing a light over the ship's gunwale for a short time and then concealing it.

STORM-SIGNALS.

174. The various civilized nations of the world give warning to mariners of the approach of storms. These notices are received by telegraph at various stations along the coast and indicate the approach of storms and the expected direction of the wind. In the United States the system of weather signals is very complete, information of the approach of storms being received from various stations in the United States and even throughout the West Indies. These warnings are published at the various seaports by the display of flags by day and by lanterns at night, also by

bulletins and reports furnished to newspapers. Every effort is made by the United States Weather Bureau to give these warnings as early as possible at all points where they may be of service to mariners and others.

United States Storm-Signals.

175. (1) The signal warnings are as follows:



Flags 8 feet square. Pennants 5 feet hoist, 12 feet fly.

Explanation.

(2) Storm signals are displayed by the United States Weather Bureau at 141 stations situated on the Atlantic and Gulf coasts of the United States from Eastport, Maine, to Brownsville, Texas. The stations at Cape Henry, Jupiter and Sand Key, Florida, are equipped for signalling by the International Code, and are prepared to transmit by telegraph the messages of passing vessels.

(3) *Storm Warning Flags.*—

(a) A red flag, with a black center, indicates that a storm of marked violence is expected.

(b) The pennants displayed with the flags indicate the direction of the wind; red, easterly (from northeast to south); white, westerly (from southwest to north). The pennant above the flag indicates that the wind is expected to blow from the northerly quadrants; below, from southerly quadrants.

(c) By night a red light indicates easterly winds, and a white light above a red light, westerly winds.

(4) *Hurricane Warnings.*—

(a) Two red flags, with black centers, displayed one above the other, indicate the expected approach of tropical hurricanes, and also of those extremely severe and dangerous storms which occasionally move across the lakes and northern Atlantic coast.

(b) Hurricane warnings are not displayed at night.

TO DRESS SHIP.

176. (1) Cross all but royal yards. Lower into places where secured, all derricks, booms, etc. Ship flag- and jack-staffs. Hoist

a national ensign at each masthead. If the masts are the same height, the ensigns should be of the same size. At the peak or aft on a staff, display the largest ensign with which the ship is furnished. Forward on the jack-staff hoist the jack.

(2) If the dressing is complimentary to some other nation, then the ensign or standard of that nation shall be hoisted, as provided in the navy regulations. There shall be no ensign displayed at a masthead (of three-masted ship), where the flag or pennant of a flag officer, commodore, or senior officer is flying. *In ships having less than three masts* the disposition of decorations shall be as nearly in accord with the foregoing as possible. The light yards should be crossed by 7.30 a. m., or if weather permits they should be left across from the evening before. At 8 a. m., the ship should be dressed and remain so until sundown.

(3) In three-masted ships the admiral's flag or the coachwhip pennant is flown from the main-truck, the vice-admiral's flag from the fore-truck, and the rear-admiral's flag from the mizzen-truck.

(4) In two-masted ships all these flags and pennants are hoisted to the main-truck.

(5) In dressing ship in two- or one-masted vessels, a national ensign may be hoisted at the same masthead with any one of the above personal flags.

(6) In mastless ships these flags and pennants are displayed from the loftiest and most conspicuous hoist.

To Full-Dress Ship.

177. (1) In addition to dressing the mastheads, when the masting of the ship will permit, a rainbow of flags will be arranged, reaching from the water-line forward to the water-line aft, by way of the end of the head-booms, topgallant mastheads, peak, and end of spanker boom. Peculiarly masted ships must provide to make the most artistic display, as little modified from the rainbow effect as it is possible for them to arrange.

(2) As it is intended that all ships shall, where possible, be dressed alike, the following explanation of the appended table is given as a guide to insure uniformity.

(3) Commencing at the water-line forward, the flags are given in groups. Stop these flags on the line, allowing a foot between them for a distance equal to the height of the head-booms from the water. When this distance is filled out, and some of the flags are left, throw out the remainder, and commence afresh at the first flag in the next group and work through this group, allowing a foot between the flags; throw out the surplus flags, and begin again at the first flag of the next group, and so on to the water-line aft. The lines upon which the flags are bent should be arranged with stops to show where the flags are bent on, and should be tagged to show what flags belong at such points.

(4)

POSITION.	FLAG.	CODE.	SIZE.
(a) From water-line to end of head-booms	Numeral	Navy Signal	Small
	No. 2	do.	do.
	Third-repeater ..	do.	do.
	Guard	do.	do.
	Second-repeater.	do.	do.
	No. 0	do.	do.
	Answering	do.	do.
	Dispatch	do.	do.
	Preparatory	do.	do.
	Cornet	do.	do.
	Interrogatory ..	do.	do.
	General-recall ..	do.	do.
(b) From end of head- booms to fore-topgallant masthead	B	International	.....
	C	do.	.....
	P	do.	.....
	F	do.	.....
	S	do.	.....
	D	do.	.....
	No. 7	Navy Signal	Small
	Church	do.	do.
	M	International	.....
	Answering	Navy Signal	Small
	H	International	.....
	Affirmative	Navy Signal	Small
	T	International	.....
	Interrogatory ..	Navy Signal	Small
	J	International	.....
	Numeral	Navy Signal	Small
	No. 5	do.	do.
	Preparatory	do.	do.
	No. 0	do.	do.
	G	International	.....
(c) From fore-topgal- lant masthead to main-top- gallant masthead.....	No. 1	Navy Signal	Large
	Second-repeater	do.	do.
	General-recall ..	do.	do.
	First repeater ..	do.	do.
	No. 2	do.	do.
	Third-repeater ..	do.	do.
	No. 4	do.	do.
	Interrogatory ..	do.	do.
	Danger	do.	do.

POSITION.	FLAG.	CODE.	SIZE.
(d) From main-topgallant masthead to mizzen-topgallant masthead.....	No. 3.....	Navy Signal	Large
	Numeral.....	do.	do.
	Dispatch.....	do.	do.
	Affirmative	do.	do.
	Cornet	do.	do.
	Church	do.	.....
	No. 9.....	do.	Large
	Answering.....	do.	do.
	Telegraph	do.	do.
	Interrogatory . .	do.	do.
(e) From mizzen-topgallant masthead to peak....	Guard	do.	do.
	R	International	.....
	W	do.	.....
	L	do.	.....
	N	do.	.....
	K	do.	.....
	V	do.	.....
(f) From peak to waterline by way of end of spankerboom.....	Q	do.	.....
	No. 8.....	Navy Signal	Boat
	Third-repeater..	do.	do.
	No. 3	do.	do.
	First-repeater . .	do.	do.
	No. 2.....	do.	do.
	Preparatory....	do.	do.
	No. 7.....	do.	do.
	Affirmative . . .	do.	do.
	No. 5.....	do.	do.
	Answering . . .	do.	do.
	No. 6.....	do.	do.
	Interrogatory . .	do.	do.
	No. 4.. . . .	do.	do.
	Second-repeater	do.	do.
	No. 9.....	do.	do.
	Numeral	do.	do.
	No. 0.....	do.	do.

PART IX

BOAT SIGNALS.

INSTRUCTIONS FOR USING THE BOAT-SIGNAL CODE.

178. (1) The boat-code flag is flag B of the International Code, and it shall be hoisted on the same mast with a signal, to indicate that the meaning will be found in this book. It should be kept hoisted as long as signalling by this code continues.

(2) Signals made by boats are always by this code, and the code-flag is not to be used by them.

(3) With the code-flag at the masthead, the signal is addressed to the flotilla or squadron of boats; with the code-flag at the yard-arm or gaff, the signal is addressed to the ship's own boats. If a ship's distinguishing-pennant is displayed above the code-flag at the yard-arm or gaff, the signal is addressed to the boats of that ship.

179. A signal is made to a single boat by displaying above the code-flag the flag or flags representing the boat's number. If the boat addressed belongs to another ship, the latter's distinguishing-pennant must be shown above the boat's number and the code-flag.

180. (1) A signal made from the flagship or senior officer's ship by the boat-code, when no boats have been called away for exercise, and no boat's number is displayed, is addressed to the ships present, or to those whose distinguishing-pennants are shown above the code-flag.

(2) A signal thus made from any other ship is addressed to the flagship or senior officer's ship.

(3) In signalling to ships, the code-flag should be at the masthead.

181. In answering a signal to boats, the officer commanding each division should not show the answering-pennant until each boat in his division shall have answered.

182. In signalling by the boat-code, the flags and pennants of the navy code are used in the same manner as in making general signals.

183. Night-signals will be made by the wig-wag code, torch, lantern, or electric night system, or the numbers may be made, preceded by the proper code-call. The answer will be made from boats by a hand-lantern, or by a Very's green star.

184. Boats away from the ship must always keep a good lookout for signals.

185. In using the boat-code of U. S. Navy:

(1) To refer to general boat-signals, hoist international B with or over signal.

SIGNAL
No.

SIGNAL.

EXERCISE UNDER SAIL OR OARS.—*Continued.*

- 82 Tack together.
- 83 Try rate of sailing.
- 84 Water—Hold.
- 85 Wear immediately.
- 86 Wear in succession.
- 87 Wear together.
- 88 Wind changed—Change front to direction indicated.
- 89 Wind—Keep close to the.
- 90 Wind—You are too close to the.

CHANGES OF DIRECTION AND FRONT.

- 91 *Boats right. (Number of points may be indicated.)
- 92 *Boats left. (Number of points may be indicated.)
- 93 Boats right half turn.
- 94 Boats left half turn.
- 95 Boats right about.
- 96 Boats left about.
- 97 *Column-s right. (Number of points may be indicated.)
- 98 *Column-s left. (Number of points may be indicated.)
- 99 Countermarch—Head-s of column-s right about.
- 00 Countermarch—Head-s of column-s left about.
- 01 *Change front to right—Guide right. (Number of points may be indicated by numeral, or new course by compass-signal.)
- 02 *Change front to left—Guide left. (Number of points may be indicated by numeral, or new course by compass-signal.)
- 03 Right circle.
- 04 Left circle.

EVOLUTIONS FROM COLUMN.

- 05 Form column open order.
- 06 Form exact column.
- 07 Form double column—Head of rear division right oblique—Guide left.
- 08 Form double column—Head of rear division left oblique—Guide right.
- 09 Form double line—Heads of divisions forward; other boats right oblique—Guide left.
- 100 Form double line—Heads of divisions forward, other boats left oblique—Guide right.
- 101 Form line right oblique—Guide left.
- 102 Form line left oblique—Guide right.

* Without compass or numeral signal, a change of 8 points is to be made.

SIGNAL
No.

SIGNAL.

EVOLUTIONS FROM LINE.

- 103 Form column—Right boat forward, others right oblique.
- 104 Form column—Left boat forward, others left oblique.
- 105 Form double column—Right boats of divisions forward, others right oblique—Guide right.
- 106 Form double column—Left boats of divisions forward, others left oblique—Guide left.
- 107 Form double line—Right division forward, left division right oblique—Guide right.
- 108 Form double line—Left division forward, right division left oblique—Guide left.

EVOLUTIONS FROM DOUBLE COLUMN.

- 109 Form line right oblique—Guide left.
- 110 Form line left oblique—Guide right.
- 111 Form column—Right division forward, left division right oblique.
- 112 Form column—Left division forward, right division left oblique.

EVOLUTIONS FROM DOUBLE LINE.

- 113 Form line—Van division forward, rear division right oblique—Guide left.
- 114 Form line—Van division forward, rear division left oblique—Guide right.
- 115 Form column—Right boats of divisions forward, others right oblique—Guide right.
- 116 Form column—Left boats of divisions forward, others left oblique—Guide left.

DISTANCE, GUIDE, AND SPEED.

- 117 Distance—Take.
- 118 Distance—Half, take.
- 119 Interval—Take, number of boat lengths indicated.
- 120 Interval—Take proper.
- 121 Guide right.
- 122 Guide left.
- 123 Guide center.
- 124 Guide—Ease off from.
- 125 Guide—Observe, more carefully.
- 126 Speed—Slow, steam at.
- 127 Speed—Half, steam at.

SIGNAL
No.

SIGNAL.

DISTANCE, GUIDE, AND SPEED.—*Continued.*

- 128 Speed—Standard, steam at.
- 129 Speed—Full, steam at.
- 130 Stop.
- 131 Back.

FORMATION AND ORDER.

- 132 Column.
- 133 Column open order.
- 134 Double column.
- 135 Line.
- 136 Double line.
- 137 Natural order.
- 138 Inverted order.
- 139 Form line of columns in the order shown by ships' distinguishing-pennants.
- 140 Form line of columns in natural order of ships' numbers.
- 141 Form—Flotilla will, on starboard beam of this, or designated, ship.
- 142 Form—Flotilla will, on port beam of this, or designated, ship.
- 143 Form—Steam launches will, on starboard side of this, or designated, ship.
- 144 Form—Steam launches will, on port side of this, or designated, ship.
- 145 Disperse and form or proceed as indicated.

NAVIGATION.

- 146 Keep farther offshore.
- 147 Keep closer inshore.
- 148 Water—Has shoaled, suddenly.
- 149 Water—Indicate depth of, in feet.
- 150 Water—Sound immediately and report depth of, and nature of bottom. (Depth in feet.)
- 151 Soundings—Have obtained, with number of feet indicated.
- 152 Sound frequently and report any change.
- 153 Proceed and mark the channel by anchoring on either side.
- 154 Proceed and mark the channel by anchoring in the fairway.
- 155 Sound in the direction indicated.
- 156 Take the place of the buoy or beacon that has disappeared or is out of position.
- 157 Proceed on bearing indicated to sound and lookout.

SIGNAL
No.

SIGNAL.

TARGET PRACTICE.

- 158 Target—Small arms, lay out.
- 159 Target—Main battery, lay out.
- 160 Target—Torpedoes, lay out.
- 161 Target—Bring, nearer.
- 162 Target—Drop.
- 163 Target is drifting.
- 164 Target—Lie farther from the.
- 165 Target—Lie nearer the.
- 166 Target—Lie to leeward of.
- 167 Target—Lie to windward of.
- 168 Target—Pick up, and bring it alongside.
- 169 Target—Place, more to port.
- 170 Target—Place, more to starboard.
- 171 Target—Place, farther off.
- 172 Target—Proceed to, and mark fall of projectiles.
- 173 Torpedo is beyond you.
- 174 Torpedo is this side of you.
- 175 Torpedo is to the right of you.
- 176 Torpedo is to the left of you.
- 177 Torpedo came up, but has been lost sight of.
- 178 Torpedo has sunk.
- 179 Torpedo recovered.
- 180 Torpedo—Search for, between ship and target or in direction indicated.
- 181 Torpedo—Sweep for.
- 182 Torpedo—Buoy, or have buoyed, position where, sank.
- 183 Torpedo-es—Bring, alongside.
- 184 Torpedoes—How many, have you picked up?

GUNNERY.

- 185 Artillery—Exercise, firing at a mark.
- 186 Artillery—Exercise, with blank cartridge.
- 187 Shell—Open fire with.
- 188 Shrapnel—Open fire with.
- 189 Shell—The, burst very well.
- 190 Close the target, or enemy.
- 191 Increase distance from target, or enemy.
- 192 Projectiles are falling beyond the target, or enemy.
- 193 Projectiles are falling short of target, or enemy.
- 194 Shell—The, burst short.
- 195 Shell—The, burst beyond the mark.
- 196 Shell—The, burst too much to the right.
- 197 Shell—The, burst too much to the left.

SIGNAL
No.

SIGNAL.

GUNNERY.—*Continued.*

- 198 Firing—Commence, with artillery.
- 199 Firing—Cease, with artillery.
- 200 Boats with *guns*, leave the line and form separately.
- 201 Boats with *machine guns* leave the line and form separately.
- 202 Boats *without guns* leave the line and form separately.
- 203 Boats *without guns* return to their ships.
- 204 Machine guns—Commence firing with.
- 205 Small arms—Commence firing with.
- 206 Machine guns and small arms cease firing.
- 207 Artillery boats—Away all, armed and equipped as indicated by signal.
- 208 Artillery boats return to respective ships or to ships designated.
- 209 Landing—Artillery cover the.
- 210 Shell the beach.
- 211 Shell the woods.
- 212 Artillery—Land the.
- 213 Artillery—Embark the.

STEAM.

- 214 Ready to proceed.
- 215 Keep up steam.
- 216 Proceed under steam.
- 217 Stop the engine-s.
- 218 Back the engine-s.
- 219 Bank fires.
- 220 Spread fires.
- 221 Let fires die out.
- 222 Coal—Require.
- 223 Water—Require.
- 224 Coal and water—Require.
- 225 Coal and water—Fill with, immediately.
- 226 Coal and water—Have sufficient, for service ordered.
- 227 Water while you are ashore.
- 228 Steam—How many pounds, pressure have you?
- 229 Steam—How many pounds, pressure can you carry?
- 230 Steam—Get up, on steam launch-es.

TOWING.

- 231 Boats in tow, cast off towlines, beginning with rear boat.
- 232 Boats of each ship make fast to their respective steamers, in proper order, ready for towing.

SIGNAL
No.

SIGNAL.

TOWING.—*Continued.*

- 233 Boats—Steamers will tow, to their respective ships.
- 234 Take the boat, lighter, or vessel designated, in tow.
- 235 Tow the boat or vessel to the position indicated.
- 236 Tow-s—Cast off the.
- 237 Tow—Prepare to be taken in.
- 238 Send boats to tow or assist the boat or vessel aground or in distress.

SIGNALS.

- 239 Answer signals promptly.
- 240 Answer by wig-wag.
- 241 Give more *attention* to signals.
- 242 You are *making* signals badly.
- 243 You are *reading* signals badly.
- 244 Cease signalling.
- 245 Report by signal.
- 246 Last signal is annulled.
- 247 Last signal—I was unable to make out.
- 248 Last signal—Repeat.
- 249 Last signal was wrong—the right one will succeed this.
- 250 Signal—Obey.
- 251 Signals—Make, more rapidly.
- 252 Signals—Make, more slowly.
- 253 You have misunderstood signal-s.
- 254 Repeat signals. (Under Negative, "Discontinue repeating signals.")
- 255 Keep within signal distance.
- 256 Ship (or hoist) the *colors*.
- 257 Unship (or haul down) the *colors*.
- 258 Use wig-wag code.
- 259 Use boat-signal code.

DAMAGE AND DEFECTS.

- 260 Report nature of your damage or defects.
- 261 Report number of hours necessary to repair damage.
- 262 Assistance required in making repairs.
- 263 Steering gear is out of order.
- 264 Propeller is foul.
- 265 Engine is disabled; unable to proceed without repairs.
- 266 Boat is leaking badly.
- 267 Boat is disabled.
- 268 Boat is sinking.

SIGNAL
No.

SIGNAL.

MISCELLANEOUS.

- 269 Ahead—Go.
- 270 Astern—Go.
- 271 Afloat—I am.
- 272 Aground—I am.
- 273 Alongside—Come.
- 274 Alongside—Go.
- 275 Anchor.
- 276 Anchor—Weigh.
- 277 Anchor by the stern.
- 278 Ashore—Go, or send, for mail orderly, now or at hour indicated.
- 279 Ashore—Go, or send, for officers, now or at hour indicated.
- 280 Ashore—Go, or send, for liberty party, now or at hour indicated.
- 281 Ashore—Go, or send, for stewards, now or at hour indicated.
- 282 Ashore—Go, or send, for fresh provisions, now or at hour indicated.
- 283 Boats—Haul clear of landing or beach.
- 284 Buoy—Make fast to.
- 285 Danger—You are running into.
- 286 Badly done.
- 287 Well done.
- 288 Evolution was not correctly performed.
- 289 Fenders—In.

EXERCISE WITH BOATS.

- 290 Away all boats, armed and equipped, for *distant service*.
- 291 Away all boats, armed and equipped, for *cutting out*.
- 292 Away all boats, armed and equipped, for *landing force*.
- 293 Battalion or battalions of *seamen*—Land.
- 294 Battalion of *marines*—Land.
- 295 Landing force—Land.
- 296 Landing force—Embark.
- 297 Exercise boats under oars and sails.
- 298 Exercise boats with crews of *marines* and *firemen*.
- 299 Away *steam launches* equipped for *tactical drill*. (A watch and division officer must be in charge of each steamer at this drill.)
- 300 All boats exercising under oars or sail return to their respective ships.
- 301 All steam launches engaged in tactical drill return to their ships.
- 302 Present exercise, cease.

(See, also, GUNNERY.)

NOTE.—The signals from 10 to 302, arranged in groups on the preceding pages, will be found in the following list, also, arranged in their alphabetical order:

Action-Ammunition.

SIGNAL No.	SIGNAL.
303	Action-s-able.
304	Commence action.
305	Continue action.
306	Discontinue action.
307	Ready for action.
308	Afloat.
271	Am afloat.
309	Aground.
272	Am aground.
310	Ahead.
311	Ahead of the.
269	Go ahead.
312	Keep ahead.
313	Keep more ahead.
314	Not so far ahead.
315	A long way ahead.
316	Alongside.
273	Come alongside.
274	Go alongside.
317	Ammunition.
318	My ammunition is nearly expended.
319	Am in want of ammunition.
320	Need ammunition for 1-pounders.
321	Need ammunition for machine guns.
322	Need ammunition for field artillery.
323	Need ammunition for rifles.
324	Need ammunition for revolvers.
325	Ammunition is damaged.
326	Troops on shore are in want of ammunition.
327	Supply troops on shore with such ammunition as can be spared.
328	Boats are in want of ammunition.
329	Have enough ammunition.
330	Can spare ammunition.
331	What ammunition is required?
332	Ammunition all expended.

Anchor-Artillery.

SIGNAL
No.

SIGNAL.

- 333 **Anchor-s-ed-ing.** (See signal No. 275.)
 334 At anchor.
 335 Must anchor.
 336 Will be at single anchor.
 337 Going to anchor.
 338 Shall endeavor to anchor in the bay in view, or the one indicated.
 339 Can spare an anchor.
 340 Only one anchor left.
 341 When you, he, or they are anchored.
 342 Lost an anchor.
 343 Have no anchor left.
 344 In want of an anchor.
 345 Sweep for anchor.
 346 Anchor stock-s.
 347 Sheet anchor-s.
 348 Bower anchor-s.
 349 Stream anchor-s.
 350 Kedge anchor-s.
 275 Anchor. (Signal of immediate execution.)
 351 Anchor at discretion.
 352 Anchor as most convenient to fire at a mark.
 353 Anchor on line of bearing indicated by compass-signal.
 354 Anchor in double column.
 355 Anchor in present formation.
 356 Anchor close inshore.
 357 Anchor in succession.
 358 I shall anchor.
 276 Weigh anchor.
 277 Anchor by the stern.
 359 **Anchorage-s.**
 360 Anchorage is safe, or good anchorage for ships.
 361 Cut out and bring off vessels at the anchorage.
 362 Destroy vessels at the anchorage.
 363 **Annul-led-ling-s.**
 246 Last signal is annulled.
 364 **Answer-ed-ing-able-s.**
 240 Answer by wig-wag.
 239 Answer signals promptly.
 365 **Arsenal-s.**
 366 Destroy the arsenal.
 367 **Artillery.**
 213 Embark the artillery.

Artillery-Battalion.

SIGNAL No.	SIGNAL.
	Artillery.—Continued.
212	Land the artillery.
186	Exercise the artillery with blank cartridges.
185	Exercise the artillery firing at a mark.
209	Artillery cover the landing.
368	Ashore.
278	Go, or send, ashore for mail orderly, now or at hour indicated.
279	Go, or send, ashore for officers, now or at hour indicated.
280	Go, or send, ashore for liberty party, now or at hour indicated.
281	Go, or send, ashore for stewards, now or at hour indicated.
282	Go, or send, ashore for fresh provisions, now or at hour indicated.
369	Assist-ed-ing-ance-s.
11	Assist boat, or vessel, requiring aid.
10	Assist sails with oars or steam to keep position.
262	Assistance required in making repairs.
370	Specify nature of assistance required.
371	Can give assistance.
372	Have, or has, given every assistance.
373	Need immediate assistance.
374	Astern.
270	Go astern.
375	Attack-s-ed-ing.
376	Begin the attack.
377	Attack has begun.
378	Postpone the attack.
379	Mean to attack the enemy as soon as possible.
380	Have been attacked by.
381	To be attacked.
131	Back-s-ed-ing.
218	Back the engines.
382	Baggage.
383	Send baggage to the rear.
384	Leave heavy baggage on board.
385	Bank-s-ed-ing.
219	Bank fires.
386	Barge-s.
387	Send the barge to this or vessel designated.
388	Send barge to boat landing.
389	Battalion-s.
293	Land battalion, or battalions, of seamen.
294	Land battalion of marines.

Battery-Board.SIGNAL
No.

SIGNAL.

- 390 **Battery-ies.**
 391 There are batteries.
 392 What state do batteries appear to be in?
 393 The battery-ies can be.
 394 Under the battery-ies.
 395 Keep possession of the batteries.
 396 The enemy is throwing up batteries.
 397 The enemy's batteries are destroyed.
 398 **Bayonet-s.**
 399 Charge bayonets.
 400 Need bayonets.
 401 Can spare bayonets.
 402 Have bayonets.
 403 Send me bayonets.
 404 **Beam-s.**
 405 On the beam.
 406 Forward of the beam.
 407 Abaft the beam.
 408 **Bear-s-ing-er-s-borne.**
 409 How did she, or it, bear?
 410 She, or it, then bore.
 411 Bearings and distance.
 157 Proceed on bearing indicated to sound and lookout.
 12 Bear up in succession 8 points.
 13 Bear up in succession 4 points.
 14 Bear up in succession number of points indicated.
 15 Bear up together 8 points.
 16 Bear up together 4 points.
 17 Bear up together number of points indicated.
 412 **Blockade-s-ed-ing.**
 413 Declared in a state of blockade.
 414 Still continues in a state of blockade.
 415 Blockade the entrance of.
 416 Is, or are, blockading.
 417 Has broken the blockade.
 418 Blockade is effective.
 419 **Board-s-ed-ing.**
 420 Board the vessel, or vessels, indicated.
 421 Have, or has, on board.
 422 Is on board.
 423 Come on board.
 424 Return on board.
 425 Remain on board.
 426 Bring master on board with papers.

SIGNAL No.	SIGNAL.
427	Boat-s-ing.
18	Send boat alongside this or designated ship.
19	Boats muster alongside this or designated ship in prescribed order.
20	All boats return to ship-s or to ship designated.
91	Boats right. (Number of points may be indicated.)
92	Boats left. (Number of points may be indicated.)
93	Boats right half turn.
94	Boats left half turn.
95	Boats right about.
96	Boats left about.
38	Boats advance and land.
266	Boat is leaking badly.
267	Boat is disabled.
268	Boat is sinking.
238	Send boats to tow or assist the boat or vessel aground or in distress.
231	Boats in tow cast off towlines, beginning with rear.
232	Boats of each ship make fast to their respective steamers in proper order, ready for towing.
233	Steamers will tow boats to their respective ships.
234	Take the boat, lighter, or vessel indicated in tow.
235	Tow the boat, or vessel, to the position indicated.
283	Haul the boats clear of landing or beach.
297	Exercise boats under oars and sails.
298	Exercise boats with crews of marines and firemen.
290	All boats away, armed and equipped for distant service.
291	All boats away, armed and equipped for cutting out.
292	All boats away, armed and equipped for landing force.
207	Away all artillery boats armed and equipped as indicated by signal.
208	Artillery boats return to respective ships or to ship designated.
300	Boats exercising under oars or sail return to ship-s.
200	Boats with guns leave the line and form separately.
201	Boats with machine guns leave the line and form separately.
202	Boats without guns leave the line and form separately.
203	Boats without guns return to their ship-s.
428	Will send a boat.
429	Send a boat.
430	Search that boat.
431	Boats to rendezvous at—

Boat-Channel.

SIGNAL
No.

SIGNAL.

Boat-s-ing.—*Continued.*

- 432 Boats may communicate.
 433 Boats not to be risked in surf.
 434 Boat-s is, or are, swamped.

435 Bow-s-ed-ing.

- 436 On the starboard bow.
 437 On the port bow.

438 Brigade-s.

- 295 Land landing force.

439 Bring-s-ing-brought.

- 440 Bring off officers.
 441 Bring off the mail.
 442 Bring off a load of sand.
 443 Bring off person-s or article-s to be specified.
 444 Going to bring up.
 445 Have, or has, brought.
 446 Bring to and wait till—

447 Buoy-s-ed.

- 156 Take the place of the buoy or beacon that is out of place or has disappeared.
 284 Make fast to the buoy.

Cartridge-s. (*See* Ammunition.)**448 Calk-ed-er-s-ing.**

- 449 In want of calking.
 450 Have calkers on board.
 451 Can spare calkers.
 452 Will send calkers.
 453 Cannot proceed to sea without calking.

454 Cease-s-ed.

- 244 Cease signalling.
 302 Cease present exercise.

455 Change-s-ed-ing.

- 01 *Change front to right—Guide right.
 02 *Change front to left—Guide left.

456 Channel-s.

- 153 Proceed and mark the channel by anchoring either side.
 154 Proceed and mark the channel by anchoring in the fair-way.
 457 In the channel.
 458 Acquainted with the channel.
 459 The channel is straight.
 460 The channel is—

* Without compass or numeral signal, a change of 8 points is to be made.

SIGNAL No.	SIGNAL.
461	Chart-s.
462	Coast-Survey Chart-s, whose number-s is, or are, indicated.
463	H. O. Charts, whose number-s is, or are, indicated.
464	Chase-d-s-ing.
465	Chase, or steer, as per compass-signal.
466	Chase is an enemy, or stranger.
467	Chase is a vessel of war.
468	Chase is a merchant vessel.
469	Gain on chase.
470	Boats chasing are to keep within signal distance.
471	Bring chase to senior officer.
472	Examine chase, or stranger.
473	Chase is a friend.
474	Detain chase.
475	Chase is armed.
476	Endeavor to keep sight of chase during the night.
477	Chase is suspicious.
478	Circle-s-ed-ing.
03	Right circle.
04	Left circle.
479	Close-s-d-ing-ly-ness.
480	Too close.
481	As close as.
190	Close the target or enemy.
482	Close round commanding officer or vessel indicated.
147	Keep closer inshore.
483	Coal-ed-ing.
222	Require coal.
224	Require coal and water.
225	Fill with coal and water immediately.
226	Have sufficient coal and water for service ordered.
484	Color-s-ed-ing.
256	Ship, or hoist, your colors.
257	Unship, or lower, your colors.
485	Show your colors.
486	Show false colors.
487	What are their colors?
488	The same colors.
132	Column-s.
133	Column, open order.
134	Double column.
21	Form column by the wind on starboard tack.

Column-Course.

SIGNAL
No.

SIGNAL.

Column-s.—Continued.

- 22 Form column by the wind on port tack.
 97 Column-s right. (Number of points may be indicated.)
 98 Column-s left. (Number of points may be indicated.)
 05 Form column open order.
 06 Form exact column.
 07 Form double column—Head of rear division right oblique
 —Guide left.
 08 Form double column—Head of rear division left oblique—
 Guide right.
 103 Form column—Right boat forward, others right oblique.
 104 Form column—Left boat forward, others left oblique.
 105 Form double column—Right boats of divisions forward,
 others right oblique—Guide right.
 106 Form double column—Left boats of divisions forward,
 others left oblique—Guide left.
 111 Form column—Right division forward, left division right
 oblique.
 112 Form column—Left division forward, right division left
 oblique.
 115 Form column—Right boats of divisions forward, others
 right oblique—Guide right.
 116 Form column—Left boats of divisions forward, others
 left oblique—Guide left.
 489 **Come-s-ing—Came.**
 273 Come alongside.
 490 Come aboard.
 23 Come under the stern.
 24 Come within hail.
 26 Come under the bow.
 491 Coming in.
 492 Coming out.
 493 Coming from.
 494 **Compass-es.**
 495 Am in want of boat-s' compass-es.
 496 **Countermarch-es-ing-ed.**
 99 Countermarch—Head-s of column-s right about.
 00 Countermarch—Head-s of column-s left about.
 497 **Course-s-d-ing.**
 498 What course do they, or does she, steer?
 499 What course were they, or was she, steering?
 500 What course are you steering?
 501 Steer same course as senior officer.

SIGNAL
No.

SIGNAL.

- 502 **Cover-s-ed-ing.**
 503 Under cover of—
 209 Artillery cover the landing.
- 504 **Crew-s.**
 25 Boat-s' crew-s pulling badly.
 505 Boat's crew-s not in proper uniform.
- 506 **Cut-s-ting.**
 291 Away all boats armed and equipped for cutting out.
 507 Can you cut her, or them, out?
 508 Can be cut out.
 509 To cut them out.
 510 Have, or has, cut off.
 511 Can be cut off.
 512 Cut off.
 513 Cut out.
- 514 **Cutter-s.**
 515 Send cutter to this or designated vessel.
- 516 **Damage-s-ed-ing.**
 260 Report nature of your damage or defects.
 261 Report number of hours necessary to repair damage.
 517 Boat-s so much damaged as to be unfit for service until hoisted aboard.
- 518 **Danger-s-ous-ly.**
 285 You are running into danger.
 519 There is danger.
 520 It is dangerous.
- 521 **Dispatch-es-ed-ing.**
 522 Use the greatest dispatch.
 523 Dispatch is necessary.
 524 Have, or has, dispatches for.
 525 Have, or has, dispatches from.
 526 Go for dispatches.
 527 Come for dispatches.
 528 Wait for dispatches.
 529 Take dispatches out of vessel indicated and bring them to senior officer.
- 530 **Destroy-s-ed-ing-er-uctive-ion.**
 531 Think I can destroy.
 532 Shall I destroy?
 533 Can destroy.
 534 Was, or were, destroyed.
 535 Destroy prize if you cannot get her off.
 536 Was obliged to destroy.

Dine-Enemy.

SIGNAL
No.

SIGNAL.

- 537 **Dine-s-ed-ing-ner-s.**
 538 Before dinner.
 539 After dinner.
 540 Postpone dinner until the hour indicated.
 541 Boat-s' crew-s are to get their dinner.
 542 Go to dinner.
 543 **Dinghy-s.**
 544 Send dinghy.
 545 **Disable-s-ed-ing.**
 267 Boat is disabled.
 265 Engine is disabled; unable to proceed without repairs.
 546 **Disperse-s-ed-ing.**
 145 Disperse and form or proceed as indicated.
 547 **Distance-s.**
 191 Increase distance from target or enemy.
 117 Take distance.
 118 Take half distance.
 548 You are at proper distance
 549 **Distant.**
 290 Away all boats armed and equipped for distant service.
 550 **Distress-es-ed-ing.**
 373 Am in distress and need immediate assistance.
 551 Signals of distress in direction indicated.
 552 Assist vessel-s in distress.
 553 Stay by vessel-s in distress.
 554 **Do-does-doing-done.**
 286 Badly done.
 287 Well done.
 555 Can I do anything for you?
 556 If it can be done.
 557 It can be done.
 558 When it is done.
 559 **Draw-s-ing.**
 560 Draw the enemy's fire.
 561 **Embark-s-ed-ing-ation.**
 296 Embark the landing force.
 562 Embark the seamen battalion-s.
 563 Embark the marine battalion.
 213 Embark the artillery.
 564 Cover the embarkation of men or field-pieces.
 565 Cover the embarkation of landing party.
 566 **Enemy-ies.**
 567 Of the enemy.
 568 To the enemy.

Enemy-Fender.

SIGNAL
No.

SIGNAL.

Enemy-ies.—Continued.

- 569 With the enemy.
 570 When the enemy.
 571 Enemy is at sea.
 572 Is an enemy, or are enemies.
 573 The enemy's force.
 574 Enemy's ship-s.
 575 Enemy's ship-s sighted, number indicated.
 576 Engage the enemy.
 577 Enemy's ships are at anchor.
 578 Attack the enemy's rear.
 579 Attack the enemy's van.
 580 Attack the enemy's center.
 581 Enemy's ships are coming out.
 582 Enemy's ships sighted steering as indicated.
 583 Anchor and engage the enemy.
 584 Enemy is retreating.
 585 Enemy is advancing with infantry.
 586 Enemy is advancing with cavalry.
 587 Enemy is advancing with guns.
 588 Enemy is collecting in force at—

Engine-s.

- 265 Engine is disabled; cannot proceed without repairs.
 217 Stop the engine-s.
 218 Back the engine-s.

Engineer-s-ing.

- 591 Require services of an engineer officer.

Exercise-s-ed-ing.

- 297 Exercise boats under oars and sail.
 298 Exercise boats with crews of marines and firemen.
 185 Exercise artillery firing at a mark.
 593 Exercise machine guns and small-arms firing at a mark.
 186 Exercise artillery firing with blank cartridge.
 594 Exercise small-arms firing with blank cartridge.
 302 Cease present exercise.

Evolution-s. (*See Formation, Column, Line.*)

- 288 Evolution was not correctly performed.

Expedition-s.

- 597 Have received news of expedition.
 598 Expedition has sailed.
 599 Expedition has returned.

Fender-s.

- 289 In fenders.

Field-Flotilla.

SIGNAL No.	SIGNAL.
601	Field-s.
602	Field-pieces.
603	Have field-pieces.
604	Land with field-pieces.
605	Land without field-pieces.
607	Fire-s-ed-ing.
608	Is on fire.
609	There is a fire.
610	Commence firing.
611	Cease firing.
198	Commence firing with artillery.
199	Cease firing with artillery.
204	Commence firing with machine guns.
205	Commence firing with small-arms.
206	Machine guns and small-arms cease firing.
219	Bank fires.
220	Spread fires.
221	Let fires die out.
612	Start fires.
613	The ship, or vessel, is on fire and requires assistance.
614	Fire is extinguished.
615	Set fire to enemy's vessel-s as indicated.
616	Fire-engine-s.
617	Boats with fire-engines proceed to the assistance of ship, or place, on fire.
618	Fireman-men.
619	In want of firemen.
298	Exercise boats with crews of marines and firemen.
620	Fire ship-s.
621	Enemy's fire ship-s.
622	Fire ships are coming in.
623	Fire ships are coming out.
624	Do utmost to destroy fire ships.
625	Boats tow off fire ships.
626	Fire ships are destroyed.
627	Fire ships proceed on service ordered.
628	Flotilla-s.
141	Flotilla will form on starboard beam of this or designated ship.
142	Flotilla will form on port beam of this or designated ship.
56	Flotilla will pass under the stern of this or designated ship.
629	Enemy's flotilla-s.

Form-Gun.

SIGNAL No.	SIGNAL.
630	Form-s-ed-ing. (<i>See</i> Column, Flotilla, Line, Launches.)
139	Form line of columns in the order shown by ships' distinguishing-pennants.
140	Form line of columns in natural order of ships' numbers.
145	Disperse and form or proceed as indicated.
631	Formation-s.
632	Anchor in present formation.
633	Fort-s.
634	Is a strong fort.
635	Are there any forts?
636	Examine forts.
637	The fort, or forts, mount the indicated number of guns.
638	How many guns has (have) the fort-s?
639	Out of fire from the fort-s.
640	Garrison-s.
641	Endeavor to relieve the garrison.
642	Can relieve the garrison.
643	Bring off the garrison.
644	General-s-ly-ity-ship.
645	The general requests or wishes.
646	Gig-s.
647	Send the gig-s.
648	Give-s-ing-n-gave.
47	Give way. (Steamers go ahead.)
649	Guide-s-d-ing.
124	Ease off from guide.
121	Guide right.
122	Guide left.
123	Guide center.
125	Observe guide more carefully.
650	Gun-s. (<i>See</i> Artillery.)
651	Gunboat-s.
652	Gunshot.
653	Within gunshot.
654	Out of gunshot.
655	Number of guns by numeral signal.
656	Dismount the guns.
657	Mount the guns.
658	Throw the guns overboard.
659	Gun-s is (are) disabled.
660	Spike the guns or disable them.
661	Disable the gun carriages.
200	Boats with guns leave the line and form separately.

Gun-Indicate.

SIGNAL
No.

SIGNAL.

Gun-s.—Continued.

- 201 Boats with machine guns leave the line and form separately.
- 202 Boats without guns leave the line and form separately.
- 203 Boats without guns return to their ship-s.
- 662 **Hail-s-ed-ing.**
- 663 Hail the vessel indicated.
- 664 Pass within hail.
- 665 **Harbor-s-ed-ing**
- 666 Proceed into harbor.
- 667 Can see into the harbor.
- 668 In the harbor.
- 669 A good harbor.
- 670 A bad harbor.
- 671 Reconnoiter the harbor (of).
- 672 **Haul-s-ed-ing.**
- 283 Haul boats clear of beach or landing.
- 27 Haul by the wind in succession, starboard tack.
- 28 Haul by the wind in succession, port tack.
- 29 Haul by the wind together, starboard tack.
- 30 Haul by the wind together, port tack.
- 31 Haul up in succession number of points indicated.
- 32 Haul up together number of points indicated.
- 673 **Heave-s-ing.**
- 674 Heave short.
- 675 Heave up.
- 33 Heave to, starboard tack.
- 34 Heave to, port tack.
- 676 **Helm-s.**
- 36 Starboard your helm-s.
- 35 Port your helm-s.
- 677 **How.**
- 678 How far is it?
- 679 How much time do you require?
- 680 How many?
- 681 How much?
- 682 How long?
- 184 How many torpedoes have you picked up?
- 683 **Increase-s-ed-ing.**
- 191 Increase distance from target or enemy.
- 684 **Indicate-s-ed-ing-ion-or-s.**
- 149 Indicate depth of water, in feet.

Inspect-Launch.

SIGNAL No.	SIGNAL.
685	Inspect-s-ed-ing-ion-or-s.
686	Flag, or senior officer, will inspect.
687	Prepare or be prepared for inspection.
688	Intelligence.
689	Have intelligence to communicate.
690	Obtain all intelligence possible.
691	Intelligence received of, or from.
692	Communicate intelligence by signal.
693	Interval-s
119	Take interval, number of boat lengths indicated.
120	Take proper interval.
694	Keep-s-ing-kept.
147	Keep close inshore.
146	Keep farther offshore.
37	Keep away.
75	Keep stroke.
215	Keep up steam.
255	Keep within signal distance.
695	Land-s-ed-ing-landfall.
696	Make or made the land.
697	Look out for land in direction indicated.
698	Land is in sight in direction indicated.
699	Landing can be effected.
700	Good landing.
701	There is too much surf to land.
293	Land battalion-s of seamen.
294	Land battalion of marines.
295	Land the landing force.
296	Embark the landing force.
38	Boats advance and land.
702	Landing force to man boats at hour indicated.
209	Artillery cover the landing.
703	Troops to land fully equipped.
704	Troops to land lightly equipped.
212	Land the artillery.
705	Launch-es-ed-ing
706	Send sailing launch.
707	Send steam launch.
708	Send steam launch-es with gun-s mounted.
143	Steam launches will form on starboard side of this or designated ship.
144	Steam launches will form on port side of this or designated ship.

Launch-Load.

SIGNAL
No.

SIGNAL.

Launch-es-ed-ing.—*Continued.*

- 299 Away steam launches equipped for tactical drill.
- 301 All steam launches engaged in tactical drill return to their ships.
- 709 **Lead-s-ing-er-s-led.**
- 710 Keep the lead going.
- 711 **Leak-s-ed-ing-y.**
- 266 Boat is leaking badly.
- 712 **Lee.**
- 713 Lee side.
- 714 On lee bow.
- 715 On lee beam.
- 716 On lee quarter.
- 717 To leeward.
- 718 **Liberty-ies.**
- 719 Go or send for liberty party, now or at hour indicated.
- 720 Wait for liberty men.
- 721 **Life-boat-s.**
- 722 Send life-boat.
- 723 Go to life-boat station.
- 135 **Line-s-ed-ing-er-s.**
- 136 Double line.
- 109 *Form line—right oblique—Guide left.
- 110 *Form line—left oblique—Guide right.
- 113 Form line—Van division forward, rear division right oblique—Guide left.
- 114 Form line—Van division forward, rear division left oblique—Guide right.
- 09 Form double line—Heads of divisions forward, other boats right oblique—Guide left.
- 100 Form double line—Heads of divisions forward, other boats left oblique—Guide right.
- 107 Form double line—Right division forward, left division right oblique—Guide right.
- 108 Form double line—Left division forward, right division left oblique—Guide left.
- 139 Form line of columns in the order shown by ships' distinguishing-pennants.
- 140 Form line of columns in natural order of ships' numbers.
- 724 Send a line.
- 725 **Load-s-ed-ing.**
- 39 Boat indicated is too deeply loaded.

* If in single column, use 101 and 102 in place of these numbers.

SIGNAL No.	SIGNAL.
726	Look-s-ed-ing.
727	Look out ahead.
728	Look out for.
729	Machine-s-ed-ing.
204	Commence firing with machine guns.
206	Machine guns and small-arms cease firing.
730	Marine-s.
731	Marine guard-s.
732	Battalion of marines.
294	Land battalion of marines.
298	Exercise boats with crews of marines and firemen.
733	Market-s-ing.
734	Is there a market (at) ?
735	How is the market ?
736	Send market boat-s.
737	Mast-s-ed-ing.
40	Step masts.
41	Unstep masts.
42	Unstep masts before coming alongside.
738	Motion-s.
739	Report motions of.
740	Is, or are, in motion.
741	Follow motions of senior officer.
742	Disregard motions of senior officer.
743	Pay great attention to senior officers' motions during night.
744	Oar-s.
43	Boat the oars.
44	Get out oars.
45	Get oars ready.
46	Get up oars.
47	Give way oars. (Steamers go ahead.)
48	Give way oars stronger.
49	Lay on oars. (Steamers stop.)
50	Let fall, oars.
52	Muffle the oars.
51	Out oars and pull.
76	Take quicker stroke with oars.
77	Take longer stroke with oars.
53	Toss oars.
54	Toss oars, up and down.
55	Use oars to assist sails to keep position.
745	In want of number of oars indicated.

Order-Proceed.

SIGNAL No.	SIGNAL.
746	Order-s. (<i>See</i> Form, Line.)
138	Inverted ordër.
137	Natural order.
747	Orders have been received.
748	Part-s-ed-ing-y-ies.
749	Permission given to part company.
750	In case of parting company, rendezvous at.
751	Pass-es-ed-ing.
752	Pass in review.
753	Grant no passes without authority of senior officer.
754	Pennant-s.
755	Show your distinguishing (or divisional) pennant.
756	Port.
757	Port side.
758	Port bow.
759	Port beam.
760	Port quarter.
761	Port guns.
80	Port tack.
36	Port your helm.
28	Haul by the wind in succession, port tack.
30	Haul by the wind together, port tack.
34	Heave to, port tack.
762	Reconnoiter the port in view, or the one indicated, and bring off all intelligence procurable without delay.
763	Proceed into the port indicated.
764	Powder-s-ed-ing.
765	Powder is damaged.
766	Powder is expended.
767	Short of powder.
768	Can spare some powder.
769	Prize-s-d-ing.
770	Bring the prize to—
771	Send the prize to—
772	Is a prize to—
773	Destroy prize if you cannot get her off.
774	Proceed-s-ed-ing-s.
157	Proceed on bearing indicated to sound and look out.
775	You will proceed.
776	Must proceed immediately.
777	Proceed on service ordered.
216	Proceed under steam.
778	Ready to proceed on service ordered at hour indicated.
214	Ready to proceed.

Projectile-Repair.

SIGNAL No.	SIGNAL.
779	Projectile-s.
192	Projectiles are falling beyond the target, or enemy.
193	Projectiles are falling short of the target, or enemy.
780	Propeller-s.
264	Propeller is foul.
781	Propeller has lost blade-s.
782	Propeller is lost.
783	Provision-s-ed-ing.
784	Want provisions landed.
785	Land cooked provisions for the number of days indicated.
786	Short of provisions.
787	Endeavor to procure provisions.
788	Can spare some provisions.
282	Go, or send ashore for fresh provisions now, or at hour indicated.
789	Pull-ed-ing.
57	Pull easy.
58	Pull hard.
25	Boat's crew-s are pulling badly.
59	Pulling boats make best of your way to ship-s.
790	Reconnoiter-ed-ing.
791	Reconnoiter enemy's position.
792	Have reconnoitered the enemy.
793	Reconnoiter enemy, or stranger in view.
794	Send reconnoitering party.
795	Recall-s-ed-ing.
796	Recall, or leave off chase.
797	Is, or are, recalled.
798	Hoist general-recall.
799	Reef-s-ed-ing.
60	Reef sails.
61	Shake out reef-s.
62	Sails are badly reefed.
800	A dangerous reef.
801	Rejoin-s-ed-ing.
802	Rejoin as soon as possible.
803	Rendezvous.
804	To the rendezvous.
805	The rendezvous will be—
806	Open sealed rendezvous.
807	Repair-s-ed-ing.
262	Assistance required in making repairs.
808	Repairs are progressing well.

Repair-Sail.SIGNAL
No.

SIGNAL.

Repair-s-ed-ing.—*Continued.*

- 809 Repairs are finished.
- 810 Can make repairs with own force.
- 811 **Repeat-s-ed-ing-ition-edly.**
- 254 Repeat signals.
- 248 Repeat last signal.
- 812 **Report-s-ed-ing-er-s.**
- 260 Report nature of your damage or defects.
- 261 Report number of hours necessary to repair damage.
- 813 **Retreat-s-ed-ing.**
- 814 Is or are retreating.
- 815 Has or have retreated
- 816 **Review-s-ed-ing.**
- 752 Pass in review.
- 817 Will review the force.
- 818 **Rifle-s-d-ing.**
- 819 **Risk-s-ed-ing.**
- 820 Do not risk.
- 821 Do not run any risk on service ordered.
- 822 Great risk.
- 823 Without any risk.
- 824 **Row-s-ed-ing-er-s**
- 63 Pay attention to men's rowing.
- 825 Row guard during the night.
- 826 **Rudder-s.**
- 827 Rudder is sprung.
- 828 Rudder is disabled.
- 829 **Sail-s-ed-ing-or-s.**
- 830 Under sailing orders now or at hour indicated.
- 831 Sail immediately.
- 832 Intend to sail at hour indicated.
- 833 When do you sail?
- 834 When did you sail?.
- 835 Have, or has, sailed for, or with.
- 836 Have, or has, sailed from.
- 837 Bend sails.
- 838 Unbend sails.
- 64 Make sail.
- 65 Shorten sail.
- 66 Take in sail.
- 68 Sails are badly reefed.
- 69 Sails are badly set.
- 67 You are carrying too much sail.

SIGNAL
No.

SIGNAL.

Sail-s-ed-ing-or-s.—Continued.

- 839 Boats ahead shorten sail.
 840 Boats astern make more sail.
 83 Try rate of sailing.

841 Sea-s.

- 842 Have, or has, been at sea.
 843 A very heavy sea.
 844 Not much sea.
 845 Too much sea on the bar for crossing.
 846 Prepare for sea.
 847 Put to sea.
 848 When the sea has gone down.

849 Seaman-men.

- 850 In want of seamen.
 293 Land battalion or battalions of seamen.

851 Senior Officer.

- 852 Officers commanding boats repair on board senior officer.
 853 Repair on board senior officer, officer indicated.
 854 The senior officer off, or at.

855 Sheet-s.

- 70 Sheets are too flat aft.
 856 Trim aft sheets.

857 Shell-s.

- 858 In want of shrapnel shell for.
 859 Want shells for.
 187 Open fire with shell.
 188 Open fire with shrapnel.
 189 The shell burst very well.
 194 The shell burst short.
 195 The shell burst beyond the mark.
 196 The shell burst too much to the right.
 197 The shell burst too much to the left.
 210 Shell the beach.
 211 Shell the woods.

860 Shore-s, ashore, on shore.

- 861 Inshore.
 862 Offshore.
 863 Close to the shore.
 147 Keep closer inshore.
 864 Is, or are, on shore.
 865 Shore is bold.
 866 Shore is dangerous.
 867 Very deep close to the shore.
 146 Keep farther off shore.

Sick-Speed.

SIGNAL No.	SIGNAL.
868	Sick.
869	Send sick or wounded to place or vessel indicated.
870	Signal-s-ed-ing.
871	The signal is understood.
872	The signal is not understood though flags are distinguished.
873	Flags cannot be distinguished where now hoisted.
239	Answer signals promptly.
240	Answer by wig-wag.
241	Give more attention to signals.
242	You are making signals badly.
243	You are reading signals badly.
244	Cease signaling.
245	Report by signal.
246	Last signal is annulled.
247	I was unable to make out last signal.
248	Repeat last signal.
249	Last signal was wrong—the right one will succeed this.
250	Obey signal.
251	Make signals more rapidly.
252	Make signals more slowly.
253	You have misunderstood signal-s.
254	Repeat signals. (Under Negative, "Discontinue repeating signals.")
255	Keep within signal distance.
258	Use wig-wag code.
259	Use boat signal code.
874	Sound-s-ed-ing-s.
875	On soundings.
876	Off soundings.
151	Have obtained soundings with number of feet indicated.
150	Sound immediately and report depth of water and nature of bottom (depth in feet).
877	Go ahead and sound, reporting as you proceed.
152	Sound frequently and report any change.
155	Sound in the direction indicated.
157	Proceed on bearing indicated to sound and lookout.
878	No soundings.
879	Speed-s-ed-ing-y-ily.
126	Steam at slow speed.
127	Steam at half speed.
128	Steam at standard speed.
129	Steam at full speed.

Starboard-Steer.

SIGNAL No.	SIGNAL.
880	Starboard.
881	Starboard side.
882	Starboard bow.
883	Starboard beam.
884	Starboard quarter.
885	Starboard guns.
886	Starboard tack.
27	Haul by the wind in succession, starboard tack.
29	Haul by the wind together, starboard tack.
33	Heave to, starboard tack.
36	Starboard your helm.
887	Station-s-ed-ing.
888	Take station previously assigned.
889	Take station ahead of vessel or boat designated.
890	Take station astern of vessel or boat designated.
891	In proper station.
892	Steam-ed-ing.
215	Keep up steam.
216	Proceed under steam.
893	Have sufficient steam to move.
894	Have steam at hour indicated.
895	Get up steam.
230	Get up steam on steam launch-es.
228	How many pounds steam pressure have you?
229	How many pounds steam pressure can you carry?
896	Steamer-s.
897	Steamer-s approaching.
898	Look out for a steamer.
899	Steamer is a screw.
900	Steamer is a paddle wheel.
901	Steamer I want, for tow, to assist.
71	Steamers increase speed.
72	Steamers reduce speed.
73	Steamers return to your ship-s or to ship designated.
233	Steamers will tow boats to their respective ships.
232	Boats of each ship make fast to their respective steamers in proper order, ready for towing.
902	Steam launch-es. (<i>See Launch.</i>)
903	Steer-s-ed-ing.
904	Steer more to starboard.
905	Steer more to port.
906	Steer to head the current more.
263	Steering gear is out of order.

Stern-Target.SIGNAL
No.

SIGNAL.

- 907 **Stern-s.**
 23 Come under the stern.
 74 Stern all.
- 908 **Stop-s-ped-ping-per-s.**
 217 Stop the engines.
 130 Stop!
- 909 **Stroke-s-d-ing.**
 75 Keep stroke.
 910 Pull a better stroke.
 77 Take longer stroke.
 76 Take quicker stroke.
- 911 **Tack-s-ed-ing.**
 78 Tack immediately.
 79 Tack in succession.
 80 Port tack.
 81 Starboard tack.
 82 Tack together.
 33 Heave to, starboard tack.
 34 Heave to, port tack.
 21 Form column by the wind on starboard tack.
 22 Form column by the wind on port tack.
 27 Haul by the wind in succession, starboard tack.
 28 Haul by the wind in succession, port tack.
 29 Haul by the wind together, starboard tack.
 30 Haul by the wind together, port tack.
- 912 **Target-s.**
 158 Lay out small-arm target-s.
 159 Lay out main battery target-s.
 160 Lay out torpedo target-s.
 161 Bring target nearer.
 162 Drop the target.
 163 Target is drifting.
 164 Lie farther from the target.
 165 Lie nearer the target.
 166 Lie to leeward of target.
 167 Lie to windward of target.
 168 Pick up target and bring it alongside.
 169 Place target more to port.
 170 Place target more to starboard.
 171 Place target farther off.
 172 Proceed to target and mark fall of projectiles.
 913 Target is destroyed.
 914 Lay out another target in place of that destroyed.

Telegraph-Water.

SIGNAL
No.

SIGNAL.

- 915 **Telegraph-s-ed-ing-ic.**
 916 Communicate by telegraph.
 917 Telegraphic communication.
 918 Cut telegraph wires.
 919 **Tide-s-al-way.**
 920 Keep out of the tide.
 921 What is the state of the tide?
 922 What is the time of high water?
 923 **Torpedo-es.**
 173 Torpedo is beyond you.
 174 Torpedo is this side of you.
 175 Torpedo is to the right of you.
 176 Torpedo is to the left of you.
 177 Torpedo came up but has been lost sight of.
 178 Torpedo has sunk.
 179 Torpedo recovered.
 180 Search for torpedo between ship and target, or in direction indicated.
 181 Sweep for torpedo.
 182 Buoy, or have buoyed, position where torpedo sank.
 183 Bring torpedo-es alongside.
 184 How many torpedoes have you picked up?
 924 **Tow-s-ed-ing.**
 237 Prepare to be taken in tow.
 231 Boats in tow cast off towlines beginning with rear boat.
 232 Boats of each ship make fast to their respective steamers, in proper order, ready for towing.
 233 Steamers will tow boats to their respective ships.
 234 Take the boat, lighter, or vessel designated in tow.
 235 Tow the boat or vessel to the position indicated.
 236 Tow-s, cast off.
 238 Send boats to tow or assist the boat or vessel aground or in distress.
 925 **Tower-s.**
 926 Light-house tower in sight, bearing as indicated.
 927 Can see light-house tower.
 928 **Use-s-d-ing.**
 258 Use wig-wag code.
 259 Use boat signal code.
 929 **Want-s-ed-ing.**
 930 Am, is, or are in want of.
 931 **Water-s-ed-ing.**
 84 Hold water.
 148 Have shoaled water suddenly.

Water-Wind.SIGNAL
No.

SIGNAL.

Water-s-ed-ing.—*Continued.*

- 149 Indicate depth of water, in feet.
 150 Sound immediately and report depth of water and nature of bottom. (Depth in feet.)
 223 Require water.
 224 Require coal and water.
 226 Have sufficient coal and water for service ordered.
 225 Fill with coal and water immediately.
 227 Water while you are ashore.
 932 Send for water.
 933 There is plenty of water.
 934 Water is good.
 935 A good watering place.
 936 **Way-s.**
 937 Get under way now or at hour indicated.
 938 **Wear-s-ing-wore-n.**
 85 Wear immediately.
 86 Wear in succession.
 87 Wear together.
 939 **Weigh-s-ed-ing.**
 940 Weigh anchor.
 941 **Whaleboat-s.**
 942 Send whaleboat-s.
 943 **Wind.**
 89 Keep close to the wind.
 90 You are too close to the wind.
 88 Wind changed—Change front to the direction indicated.

VOCABULARY AND SPELLING TABLE.

186. (1) The following list contains a number of words in common use not found in the preceding pages, together with the letters of the alphabet and a list of syllables by means of which any word may be spelled.

(2) The syllables that occur more frequently as *final* syllables are printed in italics.

(3) The *Position-pennant* is always to be hoisted *over* a signal taken from this Vocabulary to indicate where its meaning may be found; or, on board ship, the position-pennant may be hoisted *under* the code-flag while such signals are being made.

(4) Ships' answering-pennants are to be used in the same manner as when receiving a telegraphic signal.

(5) Pennant C of the International Code may be used in place of the position-pennant for this purpose.

(6) The use of the Vocabulary at *night* may be indicated by the letters B. V. U., preceded by the code-call (electric system).

Position-pennant above.

A-Au.

SIGNAL No.	SIGNAL.	SIGNAL No.	SIGNAL.
10	A.	53	Among.
11	Aa.	54	Amphi.
12	Ab.	55	An.
13	<i>Ablc.</i>	56	Ana.
14	Abo.	57	Ance.
15	About.	58	Ancy.
16	Above.	59	And.
17	Abreast.	60	Ans.
18	Abs.	61	Ant.
19	Absent-ce-ce-s.	62	Ante.
20	Ac.	63	Anti.
21	Accouterment-s.	64	Any.
22	<i>Accous.</i>	65	Anyone.
23	Across.	66	Any orders.
24	<i>Acy.</i>	67	Anything.
25	Ad.	68	Anywhere.
26	Ade.	69	Ap.
27	Adj.	70	Apart.
28	Adrift.	71	Apo.
29	Af.	72	Appear-s-ed-ing-ance-s.
30	Afr.	73	Approach-es-ed-ing.
31	After.	74	April.
32	Ag.	75	<i>Ar.</i>
33	Against.	76	Arc.
34	<i>Age.</i>	77	<i>Arch.</i>
35	Ah.	78	Archi.
36	Ai.	79	Ard.
37	Aja.	80	Ari.
38	Ak.	81	Arm(-s).
39	Al.	82	Around.
40	Ale.	83	Arrange-s-d-ing-ment-s.
41	Alex.	84	Art(-s).
42	<i>All.</i>	85	Ary.
43	Alm.	86	<i>As.</i>
44	Almost.	87	Asm.
45	Alone.	88	Aster.
46	Along.	89	<i>At.</i>
47	A. M. (in the forenoon).	90	Ata.
48	Am.	91	<i>Ate.</i>
49	Amb.	92	Athwart.
50	Ambi.	93	Atl.
51	American.	94	Attempt-s-ed-ing.
52	Ami.	95	Au.

Position-pennant above.

Auc-Car.

SIGNAL No.	SIGNAL.	SIGNAL No.	SIGNAL.
96	Auc.	129	Beyond.
97	Aug.	130	Bi.
98	August.	131	Bin.
99	Aul.	132	Bis.
00	Aur.	133	Bit.
01	Aus.	134	Bl.
02	Austrian.	135	Black
03	Authorize-s-ed-ing.	136	Blanket-s.
04	Auto.	137	Bli.
05	Auxiliary-ies.	138	Blue.
06	Av.	139	Bo.
07	Avoid-s-ed-ing.	140	Boatswain-s.
08	Aw.	141	Bod.
09	Awav.	142	Bos.
100	Awning-s.	143	Bot.
101	Ax.	144	Both.
102	Az.	145	Bottom.
103	Aza.	146	Bou.
104	B.	147	Br.
105	Ba.	148	Brazilian.
106	Bag(-s).	149	Bre.
107	Bai.	150	Bread (Biscuit).
108	Bar.	151	Break-s-ing, Broke, Broken.
109	Barometer-s-ric.	152	Breaker-s.
110	Bas.	153	Breastwork-s.
111	Bat.	154	British.
112	Bau.	155	Bru.
113	Bav.	156	Bu.
114	Bay.	157	Bugle-s.
115	Bb.	158	Bugler-s.
116	Be.	159	Bunting.
117	Beach-es.	160	Burn-s-ed-ing-t.
118	Beacon-s.	161	But.
119	Before.	162	By (<i>bies</i>).
120	Behind.	163	C.
121	Bel.	164	Cable-s.
122	Bell buoy-s.	165	Cal.
123	Below.	166	Call-s-ed-ing.
124	Bem.	167	Camp.
125	Ben.	168	Cap.
126	Beneath.	169	Captain-s.
127	Bet.	170	Car.
128	Between.		

Position-pennant above.

Carpenter-Der.

SIGNAL No.	SIGNAL.	SIGNAL No.	SIGNAL.
171	Carpenter-s.	213	Commander-in-chief.
172	Cas.	214	Commodore.
173	Cat.	215	Communicate-s-ed- ing-ion-s.
174	Cata.	216	Con.
175	Catamaran-s.	217	Concerning.
176	Cath.	218	Contra.
177	Cau.	219	Contro.
178	Caz.	220	Cor.
179	Cc.	221	Cou.
180	Cec.	222	Could.
181	<i>Cer.</i>	223	Could have.
182	Ces.	224	Could have been.
183	Cet.	225	Counter.
184	<i>Ch.</i>	226	Countermand-s-ed-ing.
185	Chain-s-ed-ing.	227	Court-s.
186	Cham.	228	Court of inquiry.
187	Chaplain-s.	229	Court-martial, general.
188	Che.	230	Court-martial, summary.
189	Ches.	231	Coxswain-s.
190	Chi.	232	Cr.
191	Chief-s.	233	Cra.
192	Chief Engineer-s.	234	Cre.
193	Chilian.	235	Cri.
194	Chinese.	236	Cro.
195	Cho.	237	Cru.
196	Ci.	238	Cu.
197	Cipher.	239	<i>Cule.</i>
198	Cir.	240	<i>Cy (-cies).</i>
199	Circu.	241	D.
200	Cis.	242	Da.
201	Cl.	243	Dag.
202	Cla.	244	Dark.
203	<i>Cle.</i>	245	Davit-s.
204	Cloth-es-ing.	246	Day-s.
205	Co.	247	Daylight.
206	Cog.	248	De.
207	Col.	249	December.
208	Collect-s-ed-ing-ion- s-or-s.	250	Declare-s-ed-ing-ation.
209	Com.	251	Delay-s-ed-ing.
210	Come-s-ing, came.	252	Demi.
211	Command-s-ed-ing.	253	Den.
212	Commander-s.	254	<i>Der.</i>

Position-pennant above.

Detail-Executive officer.

SIGNAL No.	SIGNAL.	SIGNAL No.	SIGNAL.
255	Detail-s-ed-ing.	298	<i>El.</i>
256	Detain-s-ed-ing.	299	<i>Em.</i>
257	Detention.	300	<i>En.</i>
258	Di.	301	<i>Ence.</i>
259	Dia.	302	Endeavor-s-ed-ing.
260	Did.	303	Ene.
261	Dif.	304	Ensign-s.
262	Dismiss-es-ed-ing.	305	Boat ensign-s.
263	Do.	306	<i>Ent.</i>
264	Dom.	307	Eo.
265	Don.	308	<i>Eous.</i>
266	Done.	309	Ep.
267	Dos.	310	Eph.
268	Down.	311	Epi.
269	Dr.	312	Equ.
270	Dry-ies-ied-ing.	313	Equi.
271	Du.	314	Equipment-s.
272	Duc.	315	<i>Er.</i>
273	Dug.	316	<i>Ere.</i>
274	Duk.	317	<i>Erly.</i>
275	During.	318	<i>Ern.</i>
276	Dv.	319	<i>Ery.</i>
277	Dw.	320	<i>Es.</i>
278	<i>Dy (dies).</i>	321	<i>Escence.</i>
279	Dys.	322	<i>Escent.</i>
280	E.	323	<i>Ese.</i>
281	Ea.	324	<i>Esque.</i>
282	East.	325	<i>Est.</i>
283	Eb.	326	<i>Et.</i>
284	Ebb.	327	Eth.
285	Ec.	328	Eu.
286	<i>Ed.</i>	329	Eut.
287	Edi.	330	Ev.
288	<i>Ee.</i>	331	Evening.
289	<i>Eer.</i>	332	Every.
290	Ef.	333	Everyone.
291	Eg.	334	Everything.
292	Ei.	335	Everywhere.
293	<i>Eir.</i>	336	Ew.
294	Eith.	337	Ex.
295	Either.	338	Except-s-ed-ing-ion-s.
296	Ej.	339	Excuse-s-ed-ing.
297	<i>Ek.</i>	340	Executive officer-s.

Position-pennant above.

Expect-Has.

SIGNAL No.	SIGNAL.	SIGNAL No.	SIGNAL.
341	Expect-s-ed-ing-ation.	384	Fur.
342	Explain-s-ed-ing-ation.	385	Fus.
343	Extra.	386	<i>Fy (fies).</i>
344	<i>Ey (ies).</i>	387	G.
345	Ez.	388	Ga.
346	F.	389	Gain.
347	Fa.	390	Gal.
348	Fac.	391	Gale-s.
349	Fad.	392	Gam.
350	Fal.	393	Gan.
351	Far.	394	Ge.
352	Favorable-y.	395	General order-s.
353	Fe.	396	German.
354	February.	397	<i>Gh.</i>
355	Fec.	398	<i>Ght.</i>
356	Fed.	399	Gi.
357	Fee.	400	Gl.
358	Ff.	401	Gla.
359	Fi.	402	Go.
360	Find-s-ing, found.	403	Gone.
361	Finish-es-ed-ing.	404	Good.
362	Fl.	405	Good-bye.
363	Fla.	406	Good-morning.
364	Flag-s.	407	Good night.
365	Flank-s-ed-ing.	408	Gor.
366	Fle.	409	Gr.
367	Fli.	410	Gro.
368	Flo.	411	Gru.
369	Flood.	412	Gu.
370	Flu.	413	Gua.
371	Fo.	414	Gue.
372	For.	415	Gui.
373	Fore.	416	Gunner-s.
374	Forward-s.	417	Gunwale-s.
375	Fou.	418	<i>Gy (gies).</i>
376	Fr.	419	H.
377	Fra.	420	Ha.
378	French.	421	Hab.
379	Fri.	422	Had.
380	Friday.	423	Han.
381	From.	424	Har.
382	Ful (Full).	425	Hard.
383	Fully.	426	Has.

Position-pennant above.

Have-Ite.

SIGNAL No.	SIGNAL.	SIGNAL No.	SIGNAL.
427	Have.	470	Ih.
428	Hawser-s.	471	Ij.
429	He.	472	Ik.
430	Head.	473	Il.
431	Hec.	474	Im.
432	Hepta.	475	Imm.
433	Her.	476	Immediate-ly.
434	Here.	477	Imminent-ly.
435	Hes.	478	Imp.
436	Hi.	479	Important-ce.
437	Hil.	480	Impossible-ility.
438	His.	481	In.
439	Ho.	482	Ind.
440	Hoc.	483	Ine.
441	Hoist-s-ed-ing.	484	Inf.
442	Hom.	485	Infer.
443	Homo.	486	Infra.
444	Hor.	487	Ing.
445	Hos.	488	Inn.
446	Hot.	489	Inter.
447	How.	490	Into.
448	Hu.	491	Intra.
449	Hum.	492	Intrench-es-ed-ing- ment-s.
450	Hy.	493	Intro.
451	Hydro.	494	Io.
452	Hypo.	495	Ion.
453	Hyper.	496	Ior.
454	I.	497	Ip.
455	Ia.	498	Iqu.
456	Ib.	499	Ique.
457	Ible.	500	Ir.
458	Ic.	501	Ire.
459	Ical.	502	Is.
460	Ice.	503	Ise.
461	Ick.	504	Ish.
462	Ics.	505	Isk.
463	Id.	506	Ism.
464	Ide.	507	Iso.
465	Ies.	508	Ist.
466	If.	509	It.
467	Iff.	510	Italian.
468	Ig.	511	Ite.
469	Ign.		

Position-pennant above.

Itis-Mal.

SIGNAL No.	SIGNAL.	SIGNAL No.	SIGNAL.
512	<i>Itis.</i>	555	Large.
513	<i>Ity.</i>	556	Last.
514	Iu.	557	<i>Le.</i>
515	Iv.	558	Lea.
516	Ive.	559	Leave-s-ing.
517	Iw.	560	Ledge.
518	Ix.	561	Leeward.
519	<i>Ize.</i>	562	Lem.
520	J.	563	Len.
521	Ja.	564	<i>Lence.</i>
522	Jan.	565	<i>Lent.</i>
523	January.	566	<i>Ler.</i>
524	Japanese.	567	<i>Less.</i>
525	Je.	568	<i>Let.</i>
526	Ji.	569	Letter-s.
527	Jo.	570	<i>Ley (-lies).</i>
528	Join-s-ed-ing.	571	Li.
529	Ju.	572	Light-s.
530	Judge advocate.	573	Light-house-s.
531	Junction-s.	574	Light-ship-s.
532	June.	575	Like.
533	Junior-s.	576	<i>Ling.</i>
534	July.	577	Lit.
535	Juxta.	578	Lith.
536	K.	579	List.
537	Ka.	580	<i>Lk.</i>
538	Ke.	581	<i>Ll.</i>
539	Keel-s.	582	Lo.
540	<i>Key (kies).</i>	583	Lop.
541	Ki.	584	Lower-s-ed-ing.
542	<i>Kin.</i>	585	<i>Lp.</i>
543	<i>Kind.</i>	586	<i>Ls.</i>
544	Kl.	587	<i>Lt.</i>
545	Kn.	588	Lu.
546	Knapsack-s.	589	<i>Ly (-lies).</i>
547	Ko.	590	M.
548	Kro.	591	Ma.
549	Ku.	592	Mac.
550	<i>Ky (kies).</i>	593	Machinery.
551	L.	594	Mad.
552	Ladder-s.	595	Mag.
553	Lan.	596	Mak.
554	Lantern-s.	597	Mal.

Position-pennant above.

Man-Obs.

SIGNAL No.	SIGNAL.	SIGNAL No.	SIGNAL.
598	Man (men).	641	Naval cadet-s (Midship- man-en).
599	Man (or men) of war.	642	Navigation.
600	Maneuver-s-d-ing.	643	Navigator-s.
601	Many.	644	Navy.
602	March.	645	Navy list.
603	May.	646	Navy register-s.
604	May be.	647	Navy regulation-s.
605	May have been.	648	Navy yard-s.
606	<i>Me.</i>	649	<i>Ne.</i>
607	Medical officer-s.	650	Near.
608	Mega.	651	Neither.
609	Member-s.	652	Nen.
610	<i>Ment.</i>	653	Neo.
611	<i>Mes.</i>	654	Nep.
612	Met.	655	<i>Ness.</i>
613	Meta.	656	New-s.
614	Mi.	657	Next.
615	Micro.	658	<i>Ng.</i>
616	Might-y.	659	Ni.
617	Might be.	660	Night-s.
618	Might have been.	661	<i>Nk.</i>
619	Min.	662	Nn.
620	Mis.	663	No.
621	Mistake-s-en.	664	Non.
622	Mm.	665	Nor.
623	Mn.	666	North.
624	Mo.	667	Northeast.
625	Mon.	668	Northwest.
626	Monday.	669	<i>Not.</i>
627	Mono.	670	Nothing.
628	Month-s.	671	November.
629	Moonlight.	672	Nowhere.
630	Morning-s.	673	<i>Ns.</i>
631	Most.	674	<i>Nt.</i>
632	Mu.	675	Nu.
633	Much.	676	Number-s.
634	Mud.	677	Nut-s.
635	Mult.	678	<i>Ny (nies).</i>
636	<i>My (mies).</i>	679	O.
637	N.	680	Oa.
638	Na.	681	Ob.
639	Nar.	682	Obs.
640	Nat.		

Position-pennant above.

Observe-President.

SIGNAL No.	SIGNAL.	SIGNAL No.	SIGNAL.
683	Observe-s-ed-ing.	726	Ox.
684	Obstruct-s-ed-ing-ion-s.	727	Oy.
685	Obtain-s-ed-ing.	728	Oz.
686	Oc.	729	P.
687	Oce.	730	Pa.
688	O'clock.	731	Page-s.
689	October.	732	Paint.
690	Od.	733	Pan.
691	Of.	734	Para.
692	Off.	735	Paragraph-s.
693	Officer-s.	736	Paymaster-s.
694	Official-ly.	737	Pe.
695	Og.	738	Peace-ful-ly-ness-able-y.
696	Oh.	739	Pel.
697	Oi.	740	Pen.
698	Oid.	741	Per.
699	Oj.	742	Peri.
700	Ok.	743	Peruvian.
701	Ol.	744	Petty officer-s.
702	Om.	745	Peu.
703	On.	746	Pf.
704	One-ce.	747	Pfe.
705	Oo.	748	Ph.
706	Oon.	749	Phl.
707	Op.	750	Pi.
708	Oqu.	751	Picket-s.
709	Or.	752	Pier-s.
710	Orderly-ies.	753	Pl.
711	Ore.	754	Pla.
712	Ori.	755	P. M. (in the afternoon).
713	Orl.	756	Po.
714	Ory (-ies).	757	Poly.
715	Os.	758	Por.
716	Ose.	759	Portuguese.
717	Ot.	760	Post.
718	Ou.	761	Post office.
719	Ous.	762	Pp.
720	Out.	763	Pr.
721	Out of.	764	Pratique.
722	Ov.	765	Pre.
723	Over.	766	Prepo.
724	Overcoat-s.	767	Preter.
725	Ow.	768	President.

Position-pennant above.

Prevent-Sav.

SIGNAL No.	SIGNAL.	SIGNAL No.	SIGNAL.
769	Prevent-s-ed-ing.	812	Ren.
770	Pri.	813	Rep.
771	Price-s.	814	Report-s-ed-ing.
772	Prisoner-s.	815	Requ.
773	Pro.	816	Rescue-s-ed-ing.
774	Pros.	817	Resist-s-ed-ing-ance.
775	Pu.	818	Result-s-ed-ing.
776	Pump-s.	819	Retro.
777	Pump-s, air.	820	Rev.
778	Pump-s, hand.	821	Revolver-s.
779	Pur.	822	Rh.
780	Pyr (Pyro).	823	Ri.
781	Q.	824	Ric.
782	Qua.	825	Rio.
783	Quarantine-s-ed-ing.	826	River-s.
784	Quarantine Regulations.	827	Rix.
785	Quarantine Station.	828	Ro.
786	Quartermaster-s.	829	Roadstead.
787	Que.	830	Rock-s-y.
788	Quer.	831	Rod.
789	Qui.	832	Rope-s.
790	Quick-ly.	833	Rou.
791	Quiet-ly.	834	Routine.
792	Quite.	835	Rr.
793	Quo.	836	Ru.
794	R.	837	Rup.
795	Ra.	838	Rus.
796	Rain clothes.	839	Russian.
797	Rations, cooked.	840	Ry (<i>ries</i>).
798	Rd.	841	S.
799	Re.	842	Sa.
800	Ready-ily-iness.	843	Sac.
801	Rear.	844	Sach.
802	Rear Admiral.	845	Safe-ty.
803	Receive-s-d-ing.	846	Sal.
804	Recognize-s-ed-ing.	847	Salute-s-ed-ing.
805	Record-s.	848	Sam.
806	Recorder-s.	849	San.
807	Recover-s-ed-ing.	850	Sand-y.
808	Recruit-s-ed-ing.	851	Sat.
809	Red.	852	Saturday.
810	Rei.	853	Sau.
811	Relieve-s-ed-ing-f-s.	854	Sav.

Position-pennant above.

Say-Ter.

SIGNAL No.	SIGNAL.	SIGNAL No.	SIGNAL.
855	Say-s-d-ing.	898	South.
856	Sc.	899	Southeast.
857	Sch.	900	Southwest.
858	SCO.	901	Sp.
859	Scope.	902	Spanish.
860	Se.	903	Special.
861	Seaward.	904	Squ.
862	See.	905	Squadron-s.
863	Semi.	906	Squadron regulation-s.
864	Send-s-ing, sent.	907	Ss.
865	Sentinel-s.	908	St.
866	September.	909	Sta.
867	Ser.	910	Ster.
868	Sex.	911	Sty (<i>sties</i>).
869	Sh.	912	Su.
870	Sha.	913	Sub.
871	She.	914	Suc.
872	Shi.	915	Suf.
873	Ship-s-ped-ping.	916	Sul.
874	Sho.	917	Sum.
875	Should.	918	Sunday.
876	Should be.	919	Sup.
877	Should have.	920	Super.
878	Should have been.	921	Supply-ies-ed-ing.
879	Shu.	922	Sur.
880	Si.	923	Surf.
881	Signal book-s, boat.	924	Sw.
882	Signal book-s, general.	925	Swedish.
883	Signal book-s, tactical.	926	Swi.
884	Since.	927	Sy (<i>sies</i>).
885	Sine.	928	Syl.
886	Sink-s-ing, sank, sunk.	929	Sym.
887	Sion.	930	Syn.
888	Size-s.	931	T.
889	Sk.	932	Ta.
890	Ski.	933	Tak.
891	Sko.	934	Tan.
892	Sl.	935	Tch.
893	Sm.	936	Te.
894	Sn.	937	Teer.
895	So.	938	Telephone-s-ed-ing-ic.
896	Some.	939	Tem.
897	Son.	940	Ter.

Position-pennant above.

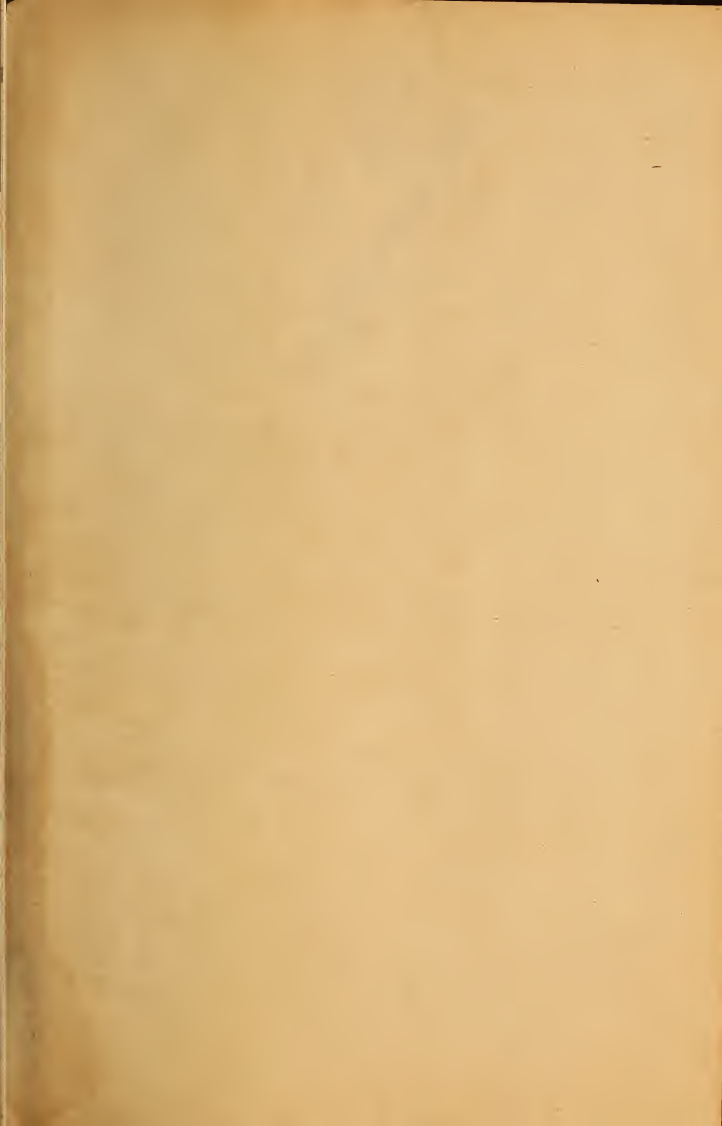
Th-Wa.

SIGNAL No.	SIGNAL.	SIGNAL No.	SIGNAL.
941	<i>Th.</i>	984	<i>Uc.</i>
942	<i>Tha.</i>	985	<i>Ud.</i>
943	<i>Than.</i>	986	<i>Uf.</i>
944	<i>That.</i>	987	<i>Ug.</i>
945	<i>The.</i>	988	<i>Ui.</i>
946	<i>There.</i>	989	<i>Uj.</i>
947	<i>Their.</i>	990	<i>Ul.</i>
948	<i>They.</i>	991	<i>Uld.</i>
949	<i>Thi.</i>	992	<i>Ule.</i>
950	<i>This.</i>	993	<i>Ull.</i>
951	<i>Tho.</i>	994	<i>Ult.</i>
952	<i>Though.</i>	995	<i>Ultra.</i>
953	<i>Thr.</i>	996	<i>Un.</i>
954	<i>Through.</i>	997	<i>Un.</i>
955	<i>Throughout.</i>	998	<i>Under (underneath).</i>
956	<i>Thu.</i>	999	<i>Underrun-s-ning-ran.</i>
957	<i>Thursday.</i>	000	<i>Understand.</i>
958	<i>Ti.</i>	001	<i>United States.</i>
959	<i>Tide-s-ing-s.</i>	002	<i>Unt.</i>
960	<i>Tig.</i>	003	<i>Until.</i>
961	<i>Till.</i>	004	<i>Up.</i>
962	<i>Tion.</i>	005	<i>Upon.</i>
963	<i>Tir.</i>	006	<i>Ur.</i>
964	<i>To.</i>	007	<i>Ure.</i>
965	<i>To-day.</i>	008	<i>Us.</i>
966	<i>To-morrow.</i>	009	<i>Uv.</i>
967	<i>Ton.</i>	010	<i>V.</i>
968	<i>Too.</i>	011	<i>Va.</i>
969	<i>Toward-s.</i>	012	<i>Val.</i>
970	<i>Tr.</i>	013	<i>Ve.</i>
971	<i>Tra.</i>	014	<i>Veer-s-ed-ing.</i>
972	<i>Trans.</i>	015	<i>Ver.</i>
973	<i>Tri.</i>	016	<i>Ves.</i>
974	<i>Ts.</i>	017	<i>Vessel-s.</i>
975	<i>Tt.</i>	018	<i>Vi.</i>
976	<i>Tu.</i>	019	<i>Vic.</i>
977	<i>Tuesday.</i>	020	<i>Vice.</i>
978	<i>Tude.</i>	021	<i>Vip.</i>
979	<i>Tw.</i>	022	<i>Vo.</i>
980	<i>Ty (ties).</i>	023	<i>Vu.</i>
981	<i>U.</i>	024	<i>Vul.</i>
982	<i>Ua.</i>	025	<i>W.</i>
983	<i>Ub.</i>	026	<i>Wa.</i>

Position-pennant above.

War-Zz.

SIGNAL No.	SIGNAL.	SIGNAL No.	SIGNAL.
027	War.	064	Windward.
028	<i>Ward</i> (<i>wards</i>).	065	Wish-es-ed-ing.
029	Wardroom-s.	066	With.
030	Was.	067	Within.
031	Watch-es-ed-ing.	068	Without.
032	Watch officer-s.	069	Wo.
033	<i>Ways</i> .	070	Wor.
034	We.	071	Wou.
035	Weather.	072	Would.
036	Wednesday.	073	Would be.
037	Week.	074	Would have been.
038	Week, Last.	075	Wr.
039	Week, Next.	076	Wro.
040	Week, This.	077	Wu.
041	Weekly.	078	Wur.
042	Went.	079	X.
043	West.	080	Xen.
044	Wh.	081	Xer.
045	Wha.	082	Y.
046	What.	083	Ya.
047	Whatever.	084	Ye.
048	Whe.	085	Yellow
049	When.	086	Yes.
050	Whenever.	087	Yesterday.
051	Where.	088	Yo.
052	Wherever.	089	You.
053	Whi.	090	Your-s.
054	Which.	091	Yourself-ves.
055	Whichever.	092	Z.
056	White.	093	<i>Zan</i> .
057	Who-se-m.	094	<i>Zar</i> .
058	Whoever.	095	Ze.
059	Why.	096	Zi.
060	Wi.	097	Zo.
061	Wig-wag.	098	Zu.
062	Will.	099	Zz
063	Will be,		



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